ALPINE®

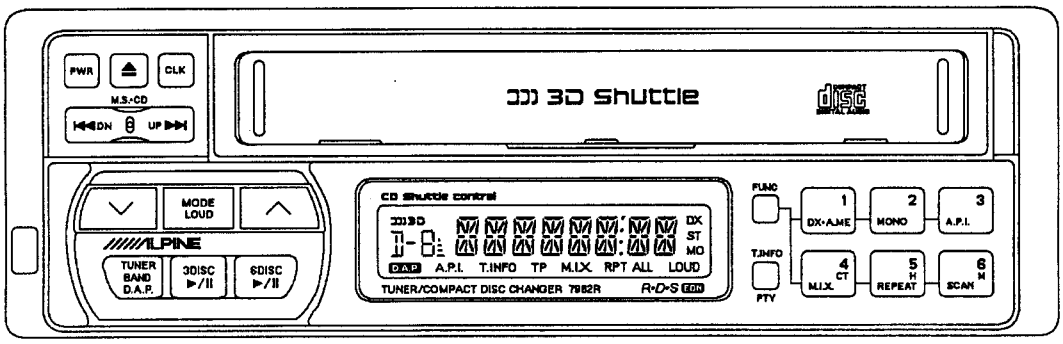
SERVICE MANUAL

FM/MW/LW/RDS In-Dash CD Changer

3D Shuttle

COMPACT disc DIGITAL AUDIO

● For the CD deck mechanism parts (DS24A020) of this model, refer to the Service Manual • DS Series (68P50238W02).



7982R

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Spare Schematic Diagram Inserted.

Specifications

<CD SECTION>

System	Optical (Compact Disc system)
Quantizing Bit Number	20 bit Liner system
Channels	2Channels
Channel Balance (1kHz)	0±3dB
Distortion (1kHz)	0.1%
Frequency Response (Ref. 1kHz)	17Hz : 0±3dB
	127Hz : 0±2dB
	10.007kHz : 0±2dB
	19.997kHz : 0±4dB
S / N Ratio (1kHz)	85dB
Separation (1kHz)	70dB
Noise Level (at Volume Min.)	0.1mV
Currents (at PLAY)	1.2A
De - Emphasis (Ref. 1kHz)	4kHz : - 20±3dB
	16kHz : -20±3dB

<FM SECTION>

Intermediate Frequency	10.7±0.1MHz
Frequency Range	87.5~108MHz
Usable Sensitivity (Mono, 98.1MHz, 30dB S / N Sens.)	17.2dBf
-3dB Limiting Sensitivity (Mono, 98.1MHz)	19.2dBf
S / N Ratio (Stereo, 98.1MHz)	56dB
Image Rejection (106.1MHz)	40dB
IF Rejection (90.1MHz)	60dB
Distortion (Input 60dBμ, 98.1MHz)	1%
Frequency Response (98.1MHz, Ref. 400Hz)	100Hz : 0±3dB
	10kHz : -12±3dB
Stereo Separation (1kHz)	20dB
Residual Noise (98.1MHz, Ref. 400Hz)	30±5dB
PS Sensitivity (98.1MHz)	36.2dBf
TP Sensitivity (98.1MHz)	36.2dBf

<MW SECTION>

Intermediate Frequency	450kHz
Frequency Range	531~1,602kHz
Sensitivity (20dB S / N, 999kHz)	34dB
S / N Ratio (999kHz)	44dB
Image Rejection (1,404kHz)	50dB
IF Rejection (603kHz)	60dB
Distortion (999kHz)	1.5%
Frequency Response (999kHz, Ref. 400Hz)	100Hz : -3±4dB
	4kHz : -12+6, -12dB

<LW SECTION>

Intermediate Frequency	450kHz
Frequency Range	153~281kHz
Sensitivity (20dB S / N, 216kHz)	41dB
S / N Ratio (216kHz)	42dB
Image Rejection (270kHz)	40dB
IF Rejection (162kHz)	50dB
Distortion (216kHz)	1.5%

Frequency Response (216kHz, Ref. 400Hz) ..... 100Hz : -3±4dB
4kHz : -12+6, -12dB

<GENERAL>

Power Supply ..... DC 14V
Pre-Output / Impedance ..... 1.6V / 10kohm
Semiconductors ..... 36 IC's, 73 Transistors, 23 Diodes, 10 Zener Diodes, 1 FET
Dimensions (W×H×D) ..... 178×50×161mm
Weight 1.8Kg

Notes : Due to continuing product improvement, specifications and designs are subject to change without notice.

In Case of Difficulty

If you encounter a problem, please review the items in the following check list. This guide will help you isolate the problem if the unit is at fault. Otherwise, make sure the rest of your system is properly connected or consult your authorized Alpine dealer.

Initial Turn-on After Installation

No function or display.	Car's ignition is off.	If connected per instructions, the unit will not operate with the car's ignition off.
	Power button off.	With the car's ignition on, push the PWR button to turn power on.
	Improper connection of power leads.	Check connections of the power leads.
	Blown fuse.	Check the fuses on the Battery leads; replace with the proper value if necessary.
Functions OK but no sound.	Volume level too low.	Adjust the volume to desired level with the ▽ or △ button.
	Processors or amplifiers are not turning on.	Make sure Remote Turn-on Lead is connected properly; make sure processors and amplifiers are properly wired.

Radio Mode

Unable to receive stations.	No antenna or open connection in cable.	Make sure the antenna is properly connected; replace the antenna or cable if necessary.
Unable to tune stations in the Seek mode.	You are in a weak signal area.	Make sure the tuner is in the DX mode.
	If the area you are in is not known to be a weak signal area, the antenna may not be grounded and connected properly.	Check your antenna connections; make sure the antenna is properly grounded at its mounting location.
	The antenna may not be the proper length.	Make sure the antenna is fully extended; if broken, replace the antenna with a new one.
Broadcast is noisy.	The antenna is not the proper length.	Extend the antenna fully; replace it if it is broken.
	The antenna is poorly grounded.	Make sure the antenna is grounded properly at its mounting location.
	The station you are listening to is weak or susceptible to multipath interference.	Put the MONO button into the Mono mode until you change stations or the signal improves.

In Case of Difficulty

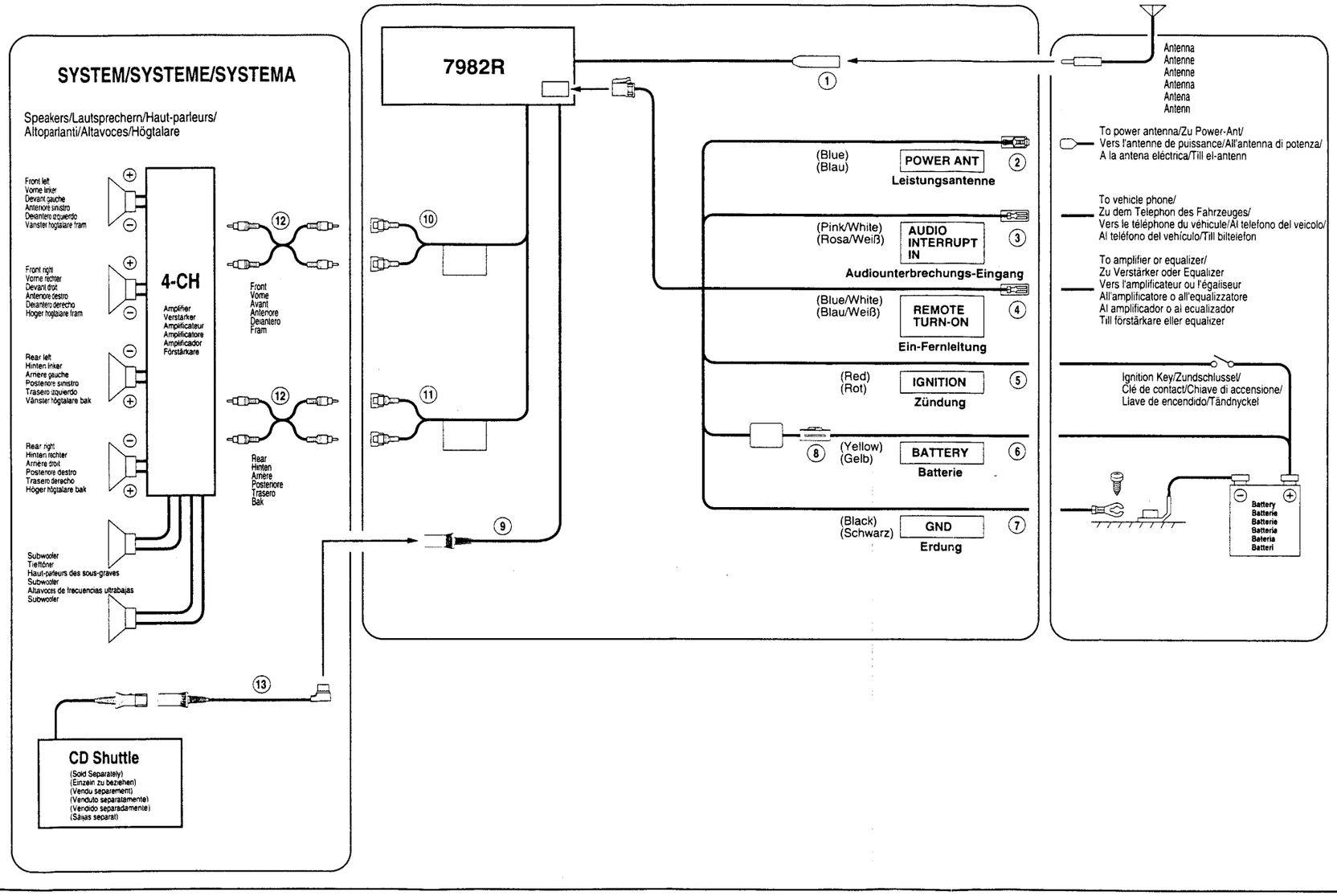
CD Mode

CD not functioning.	Out of operating temperature range +50°C (+120°F) for CD.	Allow the car's interior (or trunk) temperature to cool.
CD playback sound is wavering.	Moisture condensation in the CD Module.	Allow enough time for the condensation to evaporate (about 1 hour).
No CD functions.	DIN control cable not connected.	Make sure the control and audio cables have been properly connected per the CD Shuttle instructions.
	The CD magazine has not been inserted.	Insert the magazine with at least one CD inserted.
Music skips excessively.	The 7982R or CD Shuttle has not been mounted securely.	Follow the CD Shuttle installation instructions for proper installation.
	The transit screws were not removed before installation.	Remove the Transit Screws and reinstall the 7982R or CD Shuttle.
	The mounting angle of the 7982R or CD Shuttle is excessive.	Mount the 7982R or CD Shuttle according to the directions given in the installation manual.
	The CD being played is dirty.	Clean the CD being very careful not to scratch it.
	The CD being played is damaged.	If the CD in question is cracked or warped, discard it as it could cause damage to the CD mechanism; if the CD is scratched at one selection only, skip that selection using the Music Sensor function to play the remaining selections.
Playback of 3" discs does not work.	The 3" adaptor ring is not being used.	Place the disc into a 3" adaptor ring before inserting it into the magazine.

Indication for CD Shuttle

Display	Cause	Solution
- - - H	Protective circuit is activated due to high temperature.	Will disappear when the temperature returns to within operation range.
))) 3D ERROR-01 (3D Shuttle)	Magazine cannot be ejected. Disc is not drawn out or set back into the magazine tray. Disc change operation does not function.	Press the eject button and set to the play mode. If the play mode can not be set, press the eject button again. Once the magazine is ejected, reinsert it then set the play mode. If the magazine can not be ejected, contact a service shop.
ERROR-01 (CD Shuttle)	Malfunction in the CD Shuttle.	Consult your Alpine dealer. Press the magazine eject button and pull out the magazine. Check for indication. Insert the magazine again. If the magazine cannot be pulled out, consult your Alpine dealer.
	Magazine ejection not possible.	Press the magazine eject button. If the magazine does not eject, consult your Alpine dealer.
))) 3D ERROR-02 (3D Shuttle)	Disc is drawn out of the magazine tray but is not set back into it.	Press the eject button to eject the magazine. Now insert an empty magazine and recover the disc. If this does not work, contact a service shop.
	Magazine does not move forward or backward.	Press the eject button to eject the magazine. If there is a disc inside the changer, insert an empty magazine and recover it. If this does not work, contact a service shop.
ERROR-02 (CD Shuttle)	Disc is in player mechanism.	Press the magazine eject button, and insert an empty magazine.
EEEE	Incorrect connection or disconnection of CD Shuttle.	Check connection between CD Shuttle and control unit.
NO MAGZN	No magazine is loaded into CD Shuttle.	Insert a magazine.
NO DISC (CD Shuttle)	No indicated disc.	Choose another disc.

Connections

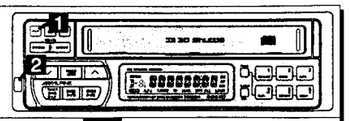


① **Antenna Receptacle**
② **Power Antenna Lead (Blue)**
When loaded with a power antenna, connect to the +B terminal of the power antenna.
③ **Audio Interrupt In Lead (Pink/White)**
④ **Remote Turn-On Lead (Blue/White)**
Connect this lead to the remote turn-on lead of your amplifier or signal processor.
⑤ **Switched Power Lead (Ignition) (Red)**
Connect this lead to an open terminal on the vehicle's fuse box or another unused power source which provides (+)12V only when the ignition is turned on or in the accessory position.
⑥ **Battery Lead (Yellow)**
Connect this lead to the positive (+) post of the vehicle's battery.
⑦ **Ground Lead (Black)**
Connect this lead to a good chassis ground on the vehicle. Make sure the connection is made to bare metal and is securely fastened using the sheet metal screw provided.
⑧ **Fuse Holder (3A)**
⑨ **DIN Connector**
Connect this to the DIN connector on the CD Shuttle.
⑩ **Front Output RCA Connectors**
RED is right and WHITE is left.
⑪ **Rear Output RCA Connectors**
RED is right and WHITE is left.
⑫ **RCA Extension Cable (Sold Separately)**
⑬ **DIN Extension Cable**

NOTE:
Connector shape of the DIN Extension cable supplied with the CD Shuttle may be not "L" shape. With this type of cable, connection may be difficult at a certain mounting location. In such a case, please get a 4910_{02} Adaptor (Sold Separately) for easy connection.

Detachable Front Panel

Detaching the Front Panel



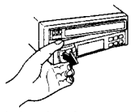
1

Press to turn off the power.

2

Press until the front panel pops out.

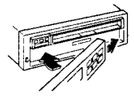
3



Grasp the left side of the front panel and pull it out.

Note: To protect the front panel, place it in the supplied case.

Attaching the Front Panel



1

- Insert the right side of the front panel into the main unit first.
- Then push the front panel until it locks firmly in the main unit and a click sound is heard.

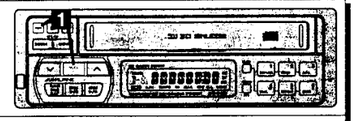
Note: Before attaching the front panel, make sure that there is no dirt or dust on the connector terminals.

Anti-Theft Operation

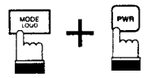
The 7982R is equipped with an Anti-Theft feature which requires a 4 digit-code entry before the unit will operate (Refer to "Programmable Code-In Procedure"). The factory preset code is (0100), if you wish, you can change the factory code to your own personalized 4 digit code (Refer to "Changing the Programmable Code").

Notes: 1. If this unit is being installed for the very first time, you must enter the factory preset code number (0100), before programming a new code number.
2. If the code is entered wrong three (3) times and "E---" is shown in the display, you must wait 10 minutes until the display reads "CODE" to try again.
If any buttons are pressed before the display shows "CODE", you must wait another 10 min. from the time the button was pressed.
Each time three (3) wrong codes are entered into the 7982R, the waiting time increases (1st time — 10 min., 2nd time — 20 min., 3rd time — 60 min.)

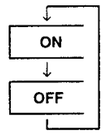
Anti-Theft Indicator On/Off



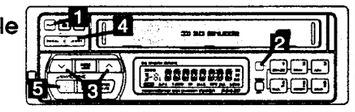
1



Press PWR button while pressing MODE button to switch on/off the function.



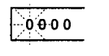
Programmable Code-In Procedure



1

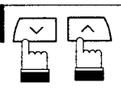
Press to turn on the power.

2



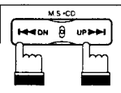
Press the button. First "0" is blinking.

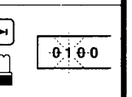
3



< Factory preset code number is "0100". >
Press to increase or decrease the number.

4

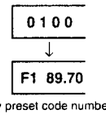




Press to select a digit of 4 digit code. The selected digit will be blinking.

Repeat the steps **3** and **4** to enter the 4 digit code number (0100).

5

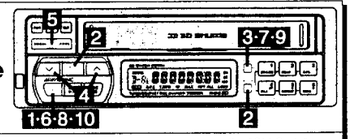


Press to accept the code number after setting the code "0100" (Factory preset code number). FM reception mode is ready for normal operation.

Note: Due to the possibility of theft, we recommend you change the factory preset code to your own personal code. If the unit is ever stolen, it will not function without entering your personal code. If the vehicle's battery is disconnected then reconnected, your personal code will still remain in memory, it will not be wiped out.

Anti-Theft Operation

Changing the Programmable Code



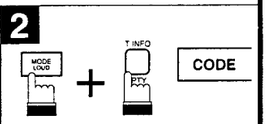
To change the factory preset code or your personal code, you must know the "Old Code" to program a "New Code" into the 7982R.
If you cannot recall or do not know the "Old Code" then contact the Alpine Service Department to arrange shipping of the 7982R to a factory facility for re-coding ONLY.

Note: Re-coding of the 7982R back to a factory preset code of "0100" is not covered under Alpine's factory warranty. Please contact Alpine Service Department for costs and conditions for re-coding of the 7982R.

1

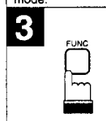
Press to make sure the unit is in the Tuner mode.

2



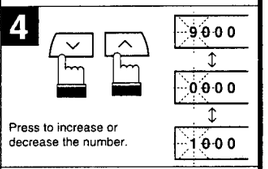
Press these buttons simultaneously.

3



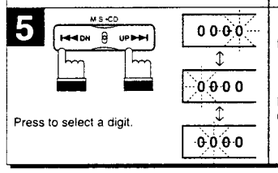
Press the button.

4



Press to increase or decrease the number.

5

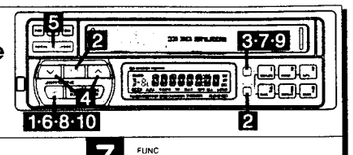


Press to select a digit.

Note: If it is the first time you are changing the programmable code, use the number "0100" as the "Old Code".

Repeats the steps **4** and **5** to enter the Old Code.

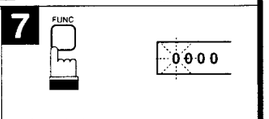
Changing the Programmable Code (Continued)



6

Press to enter the Old Code.

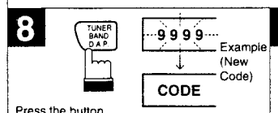
7



Press the button.

Repeat the steps **4** to **5** to enter the personal code.

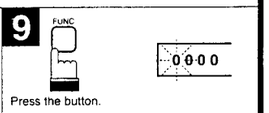
8



Example (New Code)

Press the button.

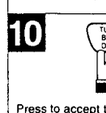
9



Press the button.

Repeat the steps **4** to **5** to input the Old Code.

10



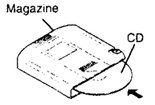
Press to accept the Old Code and make your new code permanent.

Basic Operation

Preparation for Playback

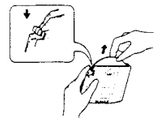
1

Magazine



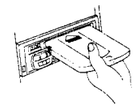
Insert your discs (up to 3) into the disc slots of the CD magazine with the label side facing up.

To remove discs already in the CD magazine, push the lever on the CD magazine for the disc you wish to eject. The disc will come halfway out from the CD magazine, so pull out the disc by grasping the disc by the edge with your hand.



Note: Hold the disc so you will not leave fingerprints on the disc surface (refer to "Disc Care" section).

2



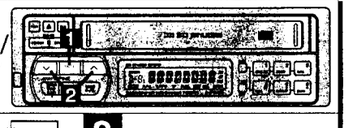
Insert the CD magazine all the way into the 7982R with the narrow side facing the unit.

Initial System Start Up

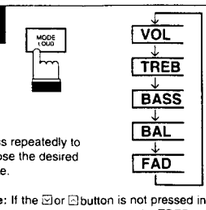
1

When operating the unit for the first time after installation or after the vehicle's battery has been disconnected and reconnected, set the volume level to its minimum, then remove the detachable front panel. Press the Reset switch with a ball-point pen or any other pointed object.

Adjusting Volume/Treble/ Bass/Balance/ Fader



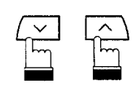
1



Press repeatedly to choose the desired mode.

Note: If the ☑ or ☑ button is not pressed in **5** seconds after selecting the TREB, BASS, BAL and FAD modes, the unit automatically sets in the VOL mode.

2

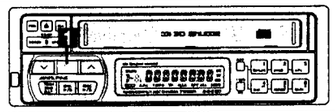


Press these buttons until the desired sound is obtained in each mode.

Note: When these buttons are pressed hard, the level changes quickly. The settings of the Bass and Treble will be individually memorized for each source (FM, MW, LW and CD) until the setting is changed.

Basic Operation

Turning Loudness On/Off

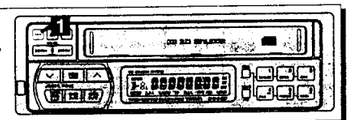


1

LOUD

Press for more than **2** seconds to activate or deactivate the loudness mode.

Turning Power On and Off



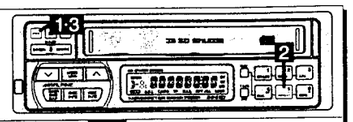
1

Press to turn on the unit.

Note: The unit can be turned on by pressing any other button except the eject button.

Press again to turn off the unit.

Switching Colour of Lighting



1

Press for more than **2** seconds to activate the colour switching mode.

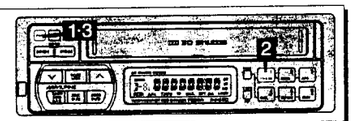
2

Press to change the colour of lighting between green and amber.

3

Press to deactivate the colour switching mode.

Adjusting Source Signal Levels



If the difference in volume level between the CD player and FM radio is too great, adjust as follows.

1

Press for more than **2** seconds.

2

Press to select the FM signal level "H" (High) or "L" (Low) to make the signal levels between the FM band and CD player closer.

FM-LV H

↕

FM-LV L

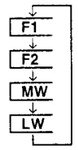
3

Press to cancel the adjusting mode.

Radio Operation

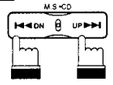
Manual Tuning

1



Press repeatedly until the desired radio band is displayed.

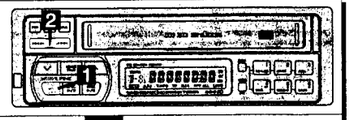
2



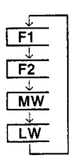
F1 90.10

Press the ⏮ DN or UP ⏭ button to move down or up one step respectively until the desired station frequency is displayed.

Automatic Seek Tuning

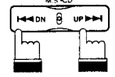


1



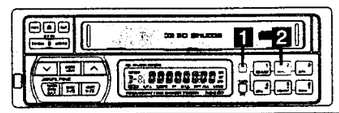
Press repeatedly until the desired radio band is displayed.

2



Press and hold down the ⏮ DN button or UP ⏭ button for more than **0.5** seconds to automatically tune downward or upward respectively.
When the radio finds a station, it stops. To automatically move to the next station, press the button for more than **0.5** seconds.

Mono/Stereo Switching



1

"ST" indicator appears when a stereo FM station is tuned in.

FUNC

Press in a radio mode and "FUNC" will be displayed for about **5** seconds.

2

F1 101.50 ST

↕

F1 101.50 MO

Press the button while the "FUNC" is being displayed.
Press to switch from the stereo mode to the monaural mode to reduce the noise level of noisy stereo broadcast due to weak signal. In the monaural mode, the MO indicator appears. Press again to return to the stereo mode.

Radio Operation

Radio Station Auto-Seek Sensitivity

1

FUNC

Press in a radio mode and "FUNC" will be displayed for about **5** seconds.

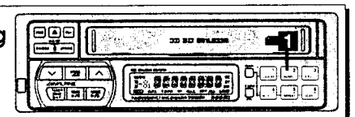
2

DX

Press in the radio mode while "FUNC" is being displayed and indicator appears to activate the DX (distance) mode to receive both strong and weak radio stations in the Auto-Seek operation.
Wait about **5** seconds until the FUNC indicator disappears.

To return to the local mode to receive only strong radio stations in the area, press the button again until the DX indicator disappears.

Manual Storing of Station Presets

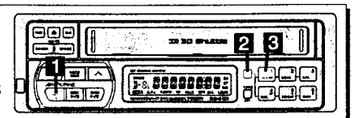


1

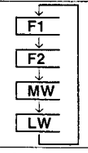
1. Tune in the desired radio station you wish to store in the preset memory.
2. Press one of the preset location number buttons (1 through **6**), into which you wish to store the station, for more than **2** seconds until the display blinks.
3. Press the same button again while the button is blinking (within **5** seconds).
   The display changes from blinking to steady lighting and the Preset indicator will appear, indicating that the station is memorized.
4. Repeat the procedure to store 5 other stations onto the same band.

A total of 30 stations can be stored in the preset memory (6 stations for each band; F1, F2, MW, LW and D.A.P.). The RDS stations can be preset in the F1, F2 and D.A.P. bands only.
Note: If a preset memory has already been set in the same preset location, it will be cleared and the new station will be memorized.

Automatic Memory of Station Presets



1



Press until the desired radio band is displayed.

2

FUNC

Press the button and "FUNC" will appear for about **5** seconds.

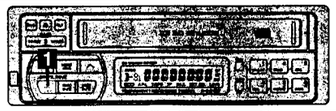
3

Press the button for more than **2** seconds while "FUNC" is being displayed.
The tuner will automatically seek and store 6 strong stations in the selected band in order of the signal strength.
When the automatic storing has been completed, the tuner goes to the station stored in the preset location No. 1.

Note: If no stations are stored, the tuner will return to the original station you were listening to before the automatic memory procedure began.

Radio Operation

Storing into Direct Access Preset (D.A.P.) Band



A combination of radio stations in any bands (up to 6 stations) can be preset onto the D.A.P. band.

1

D.A.P.

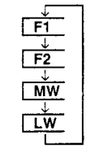
Press for more than **2** seconds until the D.A.P. indicator appears.

To memorize the stations onto the D.A.P. band, follow the steps for the Automatic or Manual Storing of Station Presets section above.

Note: This function can be used together with the Automatic Memory Preset.

Accessing Preset Stations

1

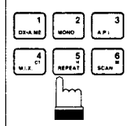


Press repeatedly until the desired band is displayed.

To select the D.A.P. band, press and hold for more than **2** seconds until the D.A.P. indicator appears.

D.A.P.

2



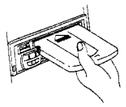
MW 999

Press the station preset button that has your desired radio station in memory. The display shows the band and frequency of the station.

CD Operation

Inserting/ Ejecting CD Magazine

1



LOAD

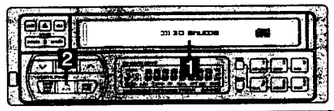
Insert the CD magazine all the way as instructed on top of the magazine.

2

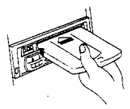
Press when you want to eject the CD.

Note: In the 3D mode, this indicator is always displayed.

Normal Play



1



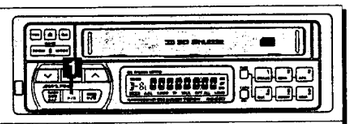
Insert the CD magazine.

2

D-1 T01 10'45

Press to start CD play.

Pause



1

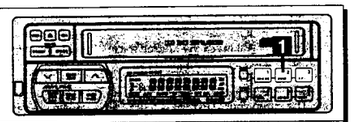
PAU

Press to temporarily stop CD playback.

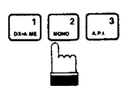
D-1 T01 10'45

To resume playback, press again.

Disc Selection



1



D-1

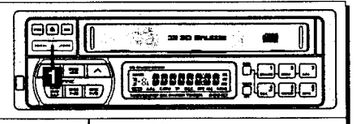
D-2

D-3

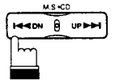
Press one of the Direct Disc Access button (1, 2, or 3) for 3D Shuttle.

CD Operation

Music Sensor (Skip)

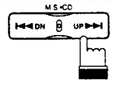


1



T04 05'35 → T04 00'00 → T03 00'00

Momentarily press the ⏮ DN side once to go back to the beginning of the current track. If you wish to access a track further back, repeatedly press until you reach the desired track. (The display example shows when you are playing the track No. 4.)

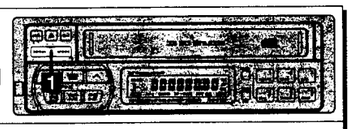


T04 05'35 → T05 00'00

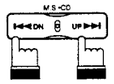
Press the UP ⏭ side once to advance to the beginning of the next track. If you wish to access a track further ahead, press repeatedly until the desired track is reached.

Note: The music sensor feature is functional in the play or pause mode.

Fast Forward and Backward

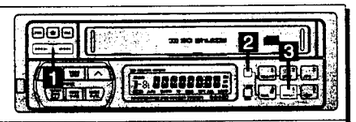


1

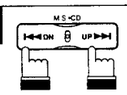


Press and hold the ⏮ DN side or UP ⏭ side to quickly move backward or forward respectively until you reach the desired portion.

Repeat Play (Single Track)



1



Locate a music track of your choice.

2

FUNC

Press this button. "FUNC" will appear for about 5 seconds.

3

RPT

Press while the "FUNC" is being displayed. The selected track will be played repeatedly. Wait about 5 seconds until the FUNC indicator disappears.

To Cancel Repeat Play

1

FUNC

Press the button and "FUNC" will appear for about 5 seconds.

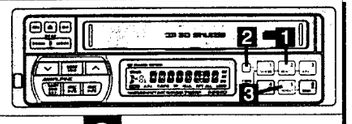
2

RPT → RPT ALL →

Press the button within 5 seconds until the "RPT" and "RPT ALL" indicators will go off. Wait about 5 seconds until the FUNC indicator disappears.

CD Operation

Repeat Play (Entire Disc)



1

Select a disc by pressing one of direct disc access buttons.

2

FUNC

Press the button and "FUNC" will appear for about 5 seconds.

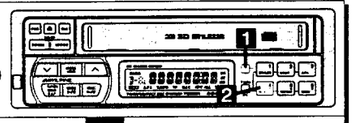
3

RPT → RPT ALL

Press the button twice while the "FUNC" is being displayed. "RPT" and "ALL" will illuminate, and the selected disc will now play repeatedly until the REPEAT function is cancelled. Wait about 5 seconds until the FUNC indicator disappears.

To cancel the REPEAT function, refer to "To Cancel Repeat Play".

M.I.X. (Random Play)



1

FUNC

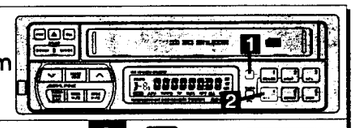
Press the button and "FUNC" will appear for about 5 seconds.

2

M.I.X.

Press the button while the "FUNC" is being displayed. The M.I.X. indicator will illuminate and the tracks on the disc will be played back in a random sequence. After all the tracks on the disc have been played back once, the player will begin a new random sequence play until the M.I.X. mode is canceled. Wait about 5 seconds until the FUNC indicator disappears.

To Cancel M.I.X. (Random Play)



1

FUNC

Press the button and "FUNC" will appear for about 5 seconds.

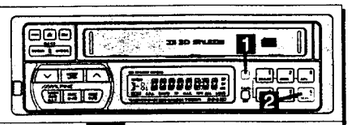
2

M.I.X. →

Press the button while the "FUNC" is being displayed. The M.I.X. indicator will go off and the M.I.X. mode is canceled. Wait about 5 seconds until the FUNC indicator disappears.

CD Operation

Scan Play



1

FUNC

Press the button and "FUNC" will appear for about 5 seconds.

2

SCAN ON → T01 → T02 →

Press the button while the "FUNC" is being displayed to play the first 10 seconds of each track on the disc in succession.

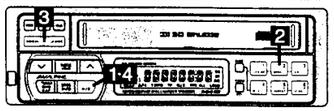
To cancel the SCAN mode:
Press the FUNC button and then SCAN button.

FUNC

SCAN OFF

Wait about 5 seconds until the FUNC indicator disappears.

Controlling 6-Disc CD Shuttle (Optional)

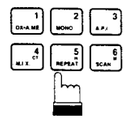


If an Alpine 6-disc CD Shuttle is connected to the 7982R, you can control the CD Shuttle using this unit.

1

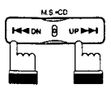
Press to activate the connected CD Shuttle.

2



Press these buttons to select the desired disc loaded in the CD Shuttle.

3



Press to select the desired track on the selected disc.

4

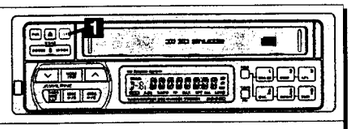
D-1 T01 10'45

Press to play back the selected track. Press again to pause playback.

Note: Other CD Shuttle operations are the same as the 7982R CD player.

Clock Operation

Displaying Time



1

RDS 12:00
or
12:00

Press momentarily to display the time.
The 7982R can display the RDS time or normal clock time.

Selecting Time and Setting Normal Clock

1

RDS 12:00
or
12:00

Press for more than **3** seconds until the time indication blinks.

2

RDS 12:00
↕
12:00

Press to select the RDS time or normal clock time.
The selected time is set **5** seconds after selecting.

3

Example: To adjust to 9: 35

9:00

Press the "H" button to adjust the hours after selecting the normal clock time.

4

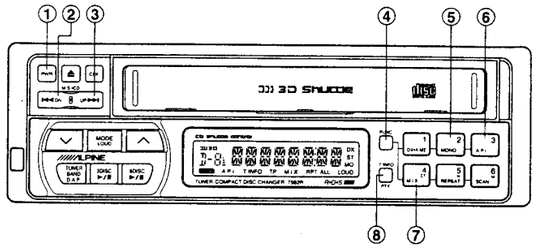
9:35

Press the "M" button to adjust the minutes.
The time is set **5** seconds after adjusting the minutes.

RDS

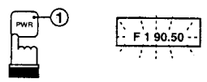
The RDS (Radio Data System) is a radio information system using the 57 kHz subcarrier of regular FM broadcast. The RDS allows you to receive a variety of information such as traffic information, station names, and to automatically re-tune to a stronger transmitter that is broadcasting the same programme.

7982R



Setting RDS Reception Mode and Receiving

1



Press for at least **2** seconds.

2

A.P.I. 1
↓
A.P.I. 2
↓
PS ONLY

Press repeatedly to select the desired A.P.I. (Automatic Programme Identification) or PS (Programme Service Name) mode.

Note: Use the A.P.I. 2 mode only when errors occur in the A.P.I. 1 mode because too many FM stations are present.
In the A.P.I. 2 mode, it requires about 1 second for tuning.
Use the PS ONLY mode when automatic retuning is not required.

3

Press to activate the selected mode.

Setting RDS Reception Mode and Receiving

4

FUNC

Press momentarily.

5

FUNC
A.P.I.

Press to activate the RDS mode.

6

RDS BBC R1

Press the I◄◄ DN or UP ►►I button to tune in the desired RDS station.

When the station signal being received has become weak;

A. In the A.P.I. 1 or A.P.I. 2 mode the unit automatically re-tunes to a stronger station that carries the same programme.

B. In the PS ONLY/A.P.I.1/A.P.I.2 mode

1)

FUNC

Press momentarily.

2)

AF SEEK
↓
SEEK END

Press for more than **2** seconds to have the unit automatically search for a stronger station in the AF (Alternative Frequencies) list.
If there is no AF station, the display shows "SEEK END."

7

Press momentarily.

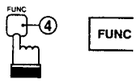
8

Press again to deactivate the A.P.I. mode

Note: You can tune in an RDS station while you are listening to CD play. Choose your desired station in 5 seconds after the step 5 above.

Recalling Preset RDS Stations

1



FUNC

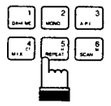
Press momentarily. The FUNC indicator appears for 5 seconds.

2

FUNC
A.P.I.

Press to activate the RDS mode while the FUNC indicator is displayed.

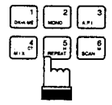
3



RDS BBC R1

Wait about 5 seconds until the FUNC indicator disappears.
Press the preset location button in which your desired RDS station is preset. If the preset station's signal is weak, the unit automatically searches and tunes to a stronger station in the AF (Alternative Frequencies) list.

4 If the preset station and the stations in the AF list cannot be received:



PI SEEK

Press the same preset location button again to search again for a station in the PI (Programme Identification) list.
If there are still no stations receivable in the area, the unit displays the frequency of the preset station and the preset indicator disappears.

Note: For presetting the RDS stations, refer to the Radio Operation section. The RDS stations can be preset in the F1, F2 and D.A.P bands only.

Receiving RDS Regional (Local) Stations

1

Press for at least **2** seconds.

2

REG ON
↕
REG OFF

Press to turn on or off the REG mode.
In the REG ON mode, the unit automatically keeps receiving the related local RDS station.

3

Press to activate the selected mode.

4

FUNC

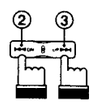
Press momentarily.

5

FUNC
A.P.I.

Press to activate the RDS mode.

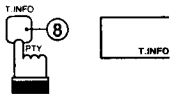
6



Press to tune in the desired local (regional) RDS station.

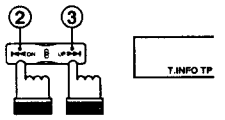
Receiving Traffic Information

1



Press to display the T.INFO indicator.

2



Press the ⏮ DN or UP ⏭ button to select your desired traffic information station. When a traffic information station is tuned in, the TP indicator lights up.

Traffic information is heard only when it is being broadcast. If traffic information is not being broadcast, the unit is set in the standby mode. When a traffic information broadcast begins, the unit automatically receives it and the display shows "TRF INFO."

When traffic information broadcast is over, the unit will automatically set in the standby mode.

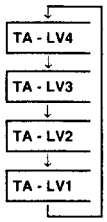
Note: If the traffic information broadcast signal falls below a certain level, the unit remains in the receiving mode for 1 minute. If the signal remains below a certain level for over 1 minute, the unit is set in the standby mode for the traffic information broadcast.

Presetting Volume Level for Traffic Information

1

Press for at least **2** seconds.

2



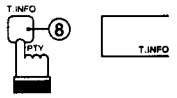
Press until the desired volume level is obtained.

3

Press again to preset the volume level for the traffic information listening.

Receiving Traffic Information While Playing CD or Radio

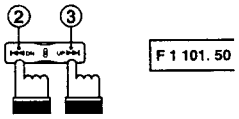
1



Press until the T.INFO indicator appears.

Note: If you are listening to a CD, the display will show the radio station you were playing before CD play for **5** seconds.

2



Press to select a traffic information station if necessary.

- When a traffic information broadcast starts, the unit automatically places the CD player in the pause mode or stops receiving the regular FM signal. The volume level rises to the preset level if you were listening to CD or FM at a low level.
- When the traffic information broadcast finishes, the unit automatically returns to the original source play before the traffic information broadcast began.
- **When traffic information stations cannot be received:**
  In the tuner mode:
  When the TP signal can no longer be received, an alarm will be sounded after 1 minute.
  In the CD or EXT mode:
  When the TP signal can no longer be received, the traffic information station of another frequency will be selected automatically.

Note: The receiver is equipped with the EON (Enhanced Other Networks) function in order to keep track of additional alternative frequencies to the AF list. If the station being received does not broadcast the traffic information, the receiver automatically tunes in the related station that broadcasts the traffic information when it occurs.

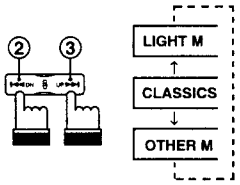
PTY Tuning

1

Press at least than **2** seconds.
The PTY (Programme Type) of the station being currently received will be displayed for 5 seconds.
If there is no receivable PTY broadcast, "NONE" will be displayed for **5** seconds.

Note: If no button is pressed within 5 seconds after pressing the PTY button, the PTY mode will be automatically cancelled.

2



Press within **5** seconds to choose the desired program type while the PTY programme type is being displayed.

The tuner starts searching for a station in the chosen programme type after 3 seconds.
The chosen programme type indicator blinks during searching and lights when a station is found.

If no station is found, "NO PTY" will be displayed for 5 seconds.

3

Press for 2 seconds time to cancel the PTY mode.

Disassembly Instructions

1. Removal of Nose Unit

(1) Refer to the Service Manual (P9)

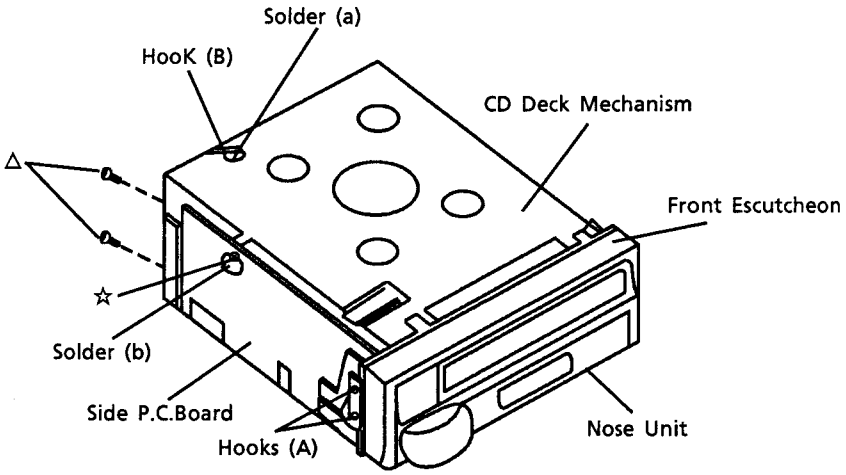


Figure 1

2. Removal of Front Escutcheon

(1) After removal of Top cover, remove six Hooks (A) as shown in Figure 1, 2.
(2) Disconnect the Wire to Side P.C.Board.
(3) Front Escutcheon with Mini P.C.Board can be removed completely.

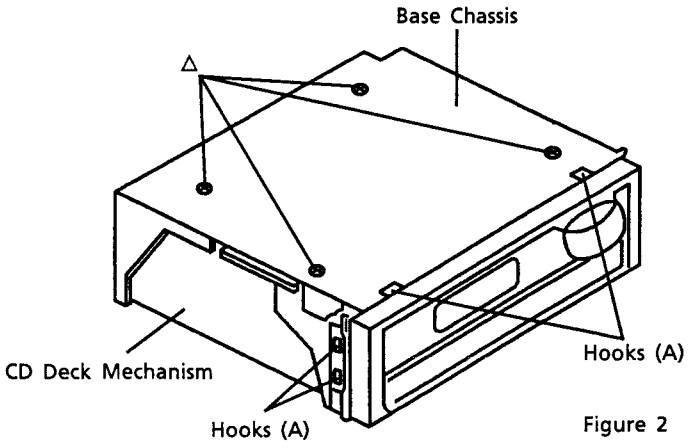


Figure 2

3. Removal of CD Deck Mechanism

(1) After removal of Front Escutcheon, Remove Solder (a) and Hook (B) as shown in Figure 1.
(2) Remove six screws marked "△" and Base Chassis as shown in Figure 1, 2.
(3) CD Deck Mechanism with Main P.C.Board, Side P.C.Board, Tuner (1) P.C.Board, Tuner (2) P.C.Board and Tuner Control P.C.Board can be removed completely.

4. Removal of Main P.C.Board

(1) After removal of CD Deck Mechanism, remove two screws marked "○" as shown in Figure 3.
(2) Disconnect all Flexible P.C.Boards and all Connectors to Main P.C.Board.

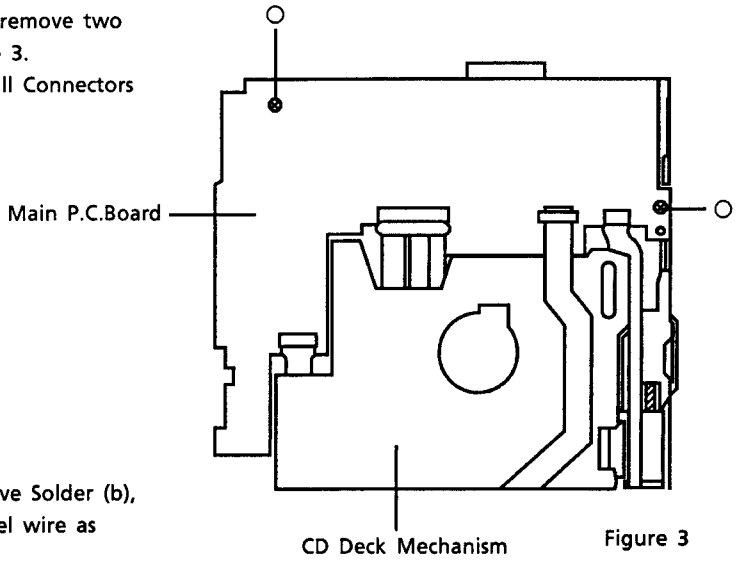


Figure 3

5. Removal of Side P.C.Board

(1) After removal of Main P.C.Board, remove Solder (b), one screw marked "☆" and one Parallel wire as shown in Figure 1.
(2) Side P.C.Board with Connector Bracket can be removed completely.

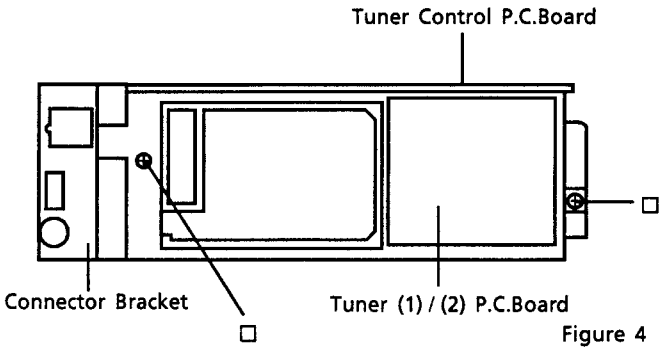


Figure 4

6. Removal of Tuner Control P.C.Board

(1) After removal of Side P.C.Board, remove two screws marked "□" as shown in Figure 4.
(2) Tuner Control P.C.Board with Tuner (1) P.C.Board and Tuner (2) P.C.Board can be removed completely.

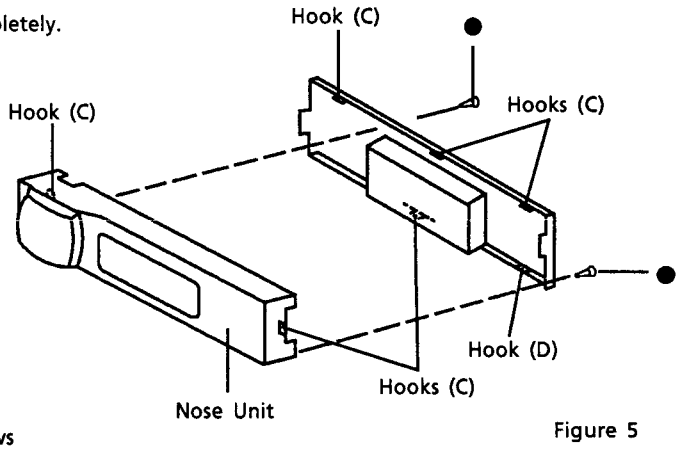


Figure 5

7. Removal of Front P.C.Board

(1) After removal of Nose Unit, remove two screws marked "●" and six Hooks (C) as shown in Figure 5.
(2) Remove the Hook (D) as shown in Figure 5.

Adjustment Procedures

1 FM SECTION

(1) Dummy Antenna Circuit

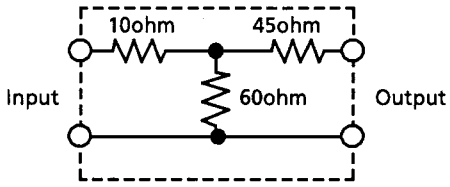


Figure 6

(2) Connections

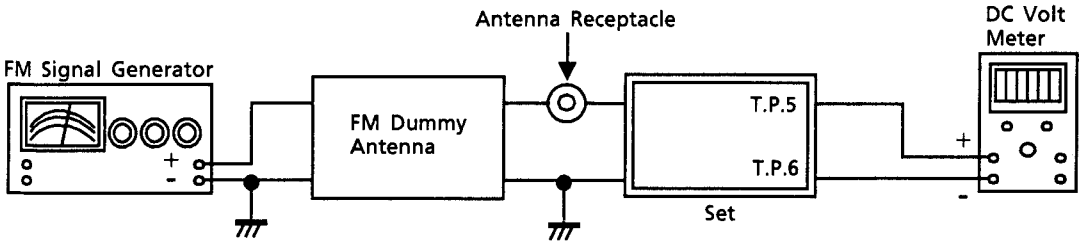


Figure 7

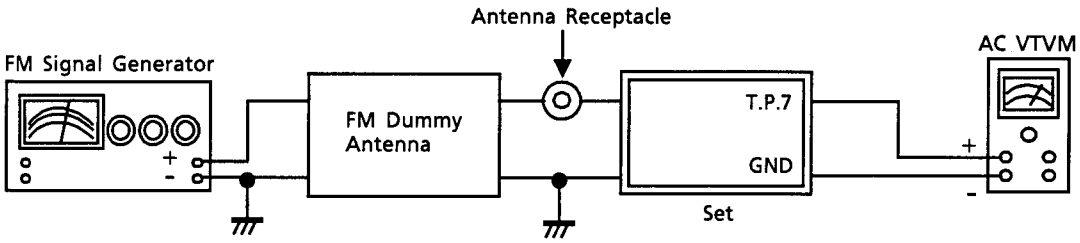


Figure 8

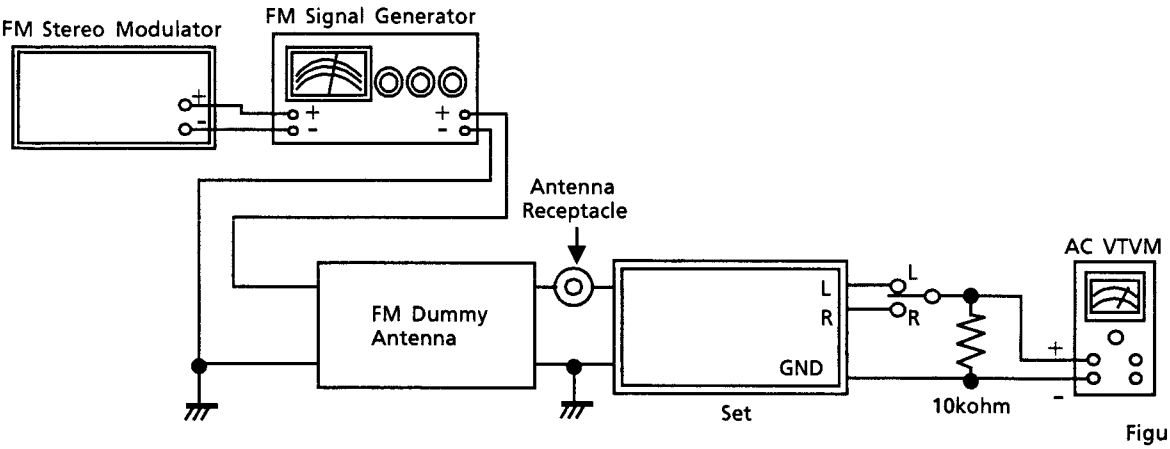
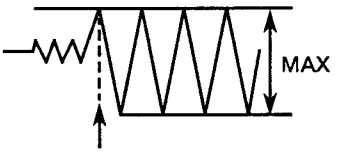


Figure 9

(3) Control Settings

Power Switch ..... ON
Band Switch ..... FM
Others ..... OFF

(4) Adjustment Procedures

Step	Description		Connection	Signal Generator	Dial Control	Test Point	Adjustment
1	IF Adjustment		Figure 7	98.1MHz, 72dB (Mod. OFF)	98.1MHz	T.P.5 T.P.6	Adjust L2101 to 0±15mV.
2	Seek Stop Adjustment		Figure 8	98.1MHz, 27dB <Mod. 400Hz>	98.1MHz	T.P.7	Adjust VR2105 for the waveform changing to maximum output. Figure : Waveform of T.P.7 output.  Stop the adjust VR2105 at this time.
3	Noise Level Adjustment	(1)	Figure 9	98.1MHz, 72dB <Mod. 400Hz>	98.1MHz	Audio Output	Adjust S413 (VOLUME) to obtain 500mV output. This value is 0dB.
		(2)	Figure 9	98.1MHz, -20dB <Mod. 400Hz>	98.1MHz	Audio Output	Adjust VR2106 to 30±5dB output at SG level minimum.
4	Stereo Separation Adjustment (Lch)		Figure 9	98.1MHz, 72dB (Stereo Mod, Lch, only)	98.1MHz	Audio Output	Adjust VR2104 for Rch output to be minimum and confirm Lch and Rch output level difference is more than 20dB.
5	Stereo Blend Adjustment (Lch)		Figure 9	98.1MHz, 46dB (Stereo Mod, Lch, only)	98.1MHz	Audio Output	Adjust VR2102 for Lch and Rch output level difference to be 8dB.
6	Stereo Separation Adjustment (Rch)		Figure 9	98.1MHz, 72dB (Stereo Mod, Rch, only)	98.1MHz	Audio Output	Proceed same adjustment under step 4 by alternating Lch and Rch.
7	Stereo Blend Adjustment (Rch)		Figure 9	98.1MHz, 46dB (Stereo Mod, Rch, only)	98.1MHz	Audio Output	Proceed same adjustment under step 5.

2 Compact Disc SECTION

(1) Preparation of Before Adjustment

① Remove the Base Chassis of Changer Unit.

② Use the wire to connect each Test Point on CD-LSI P.C.Board.

Note. After adjustment, securely remove the solder used to connect the wire.

(2) Connections

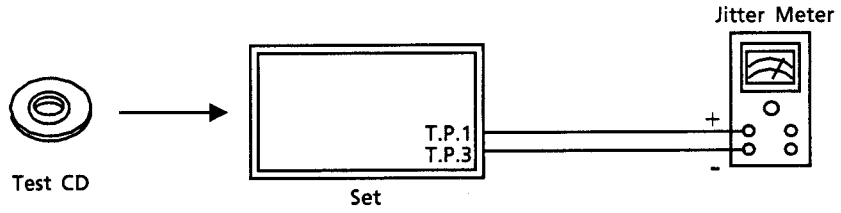


Figure 10

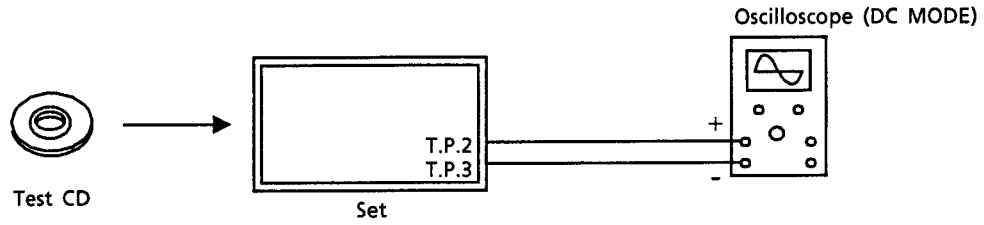


Figure 11

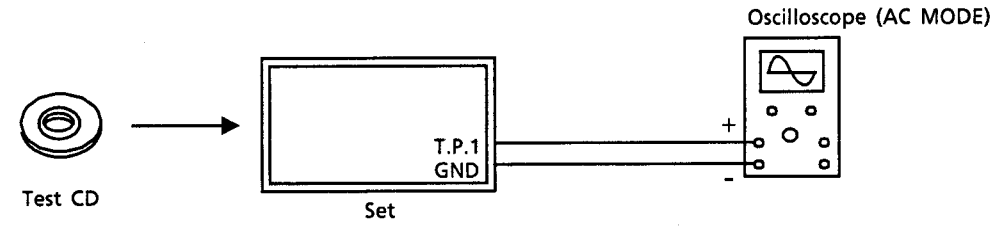


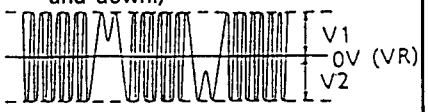
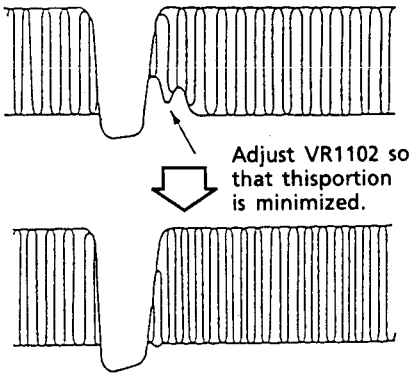
Figure 12

(3) Control Settings

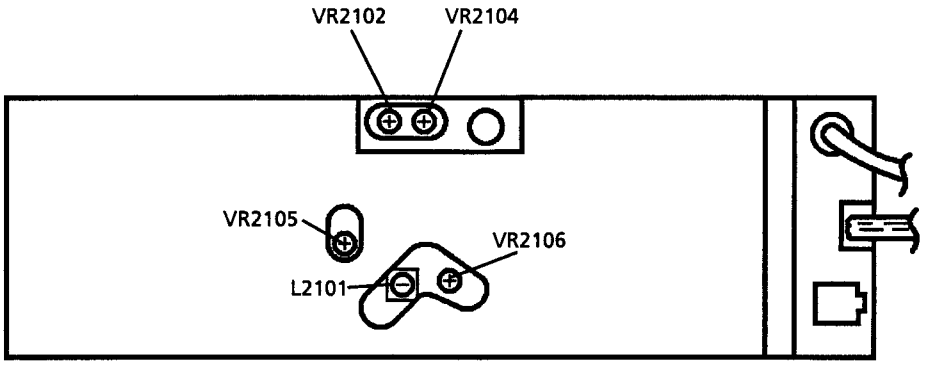
Power Switch ..... ON

Others ..... OFF

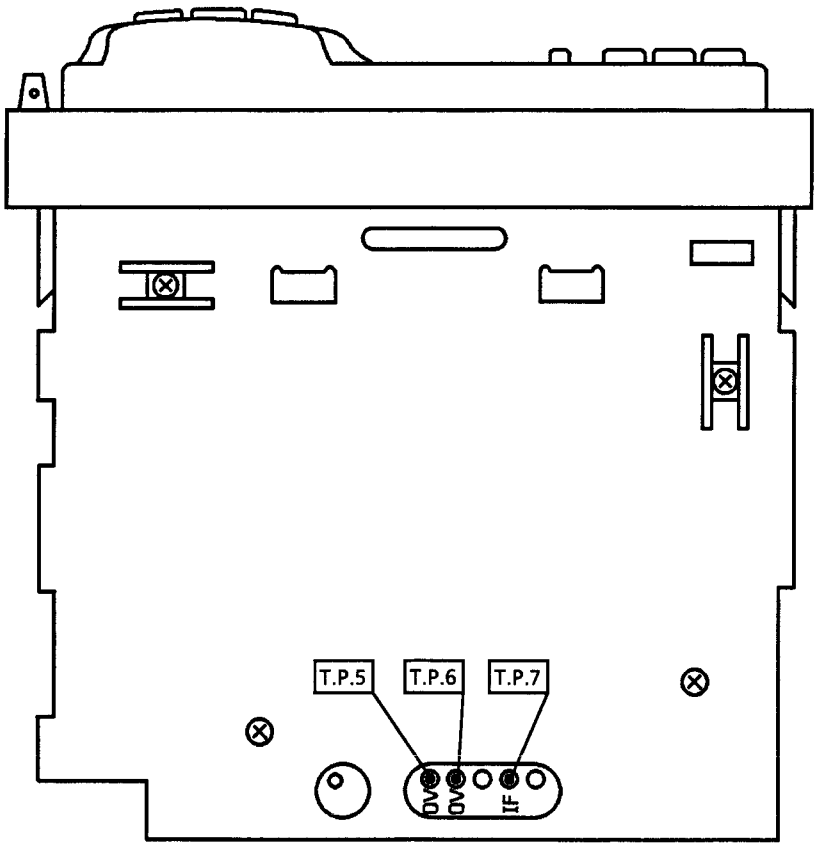
(4) Adjustment Procedures

Step	Description	Test CD	Connection	Test Point	Adjustment Point	Adjustment
1	Jitter Adjustment	TCD - 782 Track No.1 (A-BEX)	Figure 10	T.P.1 T.P.3	VR1103	①: Set the mode to playback with the test disc loaded. ②: Using the jitter meter, measure the T.P.1 signal. ③: First, rotate VR1103 fully counter-clockwise. ④: Next, carefully rote VR1103 clockwise untill the jitter meter shows a minimum value and then increases by +0.5nS from the minimum value.
2	Tracking Balance Adjustment	TCD - 782 Track No.8 (A-BEX)	Figure 11	T.P.2 T.P.3	VR1101	①: Set the mode to playback with the test disc loaded. ②: Connect the wire of T.P.3 to T.P.4. ③: Using the oscilloscope, measure the T.P.2 signal in reference to VR. (VR standard=0V) ④: Adjust VR1101 so that the positive and negative deflection widths of the T.P.2 signal are at the same level, relative to VR (0V). (The entire waveform moves up and down.)  V1 = V2 ⑤: After adjustment, disconnect the wire of T.P.3 and T.P.4
3	Tracking Offset Adjustment	TCD - 721 Track No.6 (A-BEX)	Figure 12	T.P.1	VR1102	①: Set the mode to playback with the test disc loaded. ②: Using the oscilloscope, measure the T.P.1 signal. ③: Adjust VR1102 in order to minimize the waveform induced by the reaction to the omission of the T.P.1 signal. ④: Conduct the tracking balance adjustment once again. 

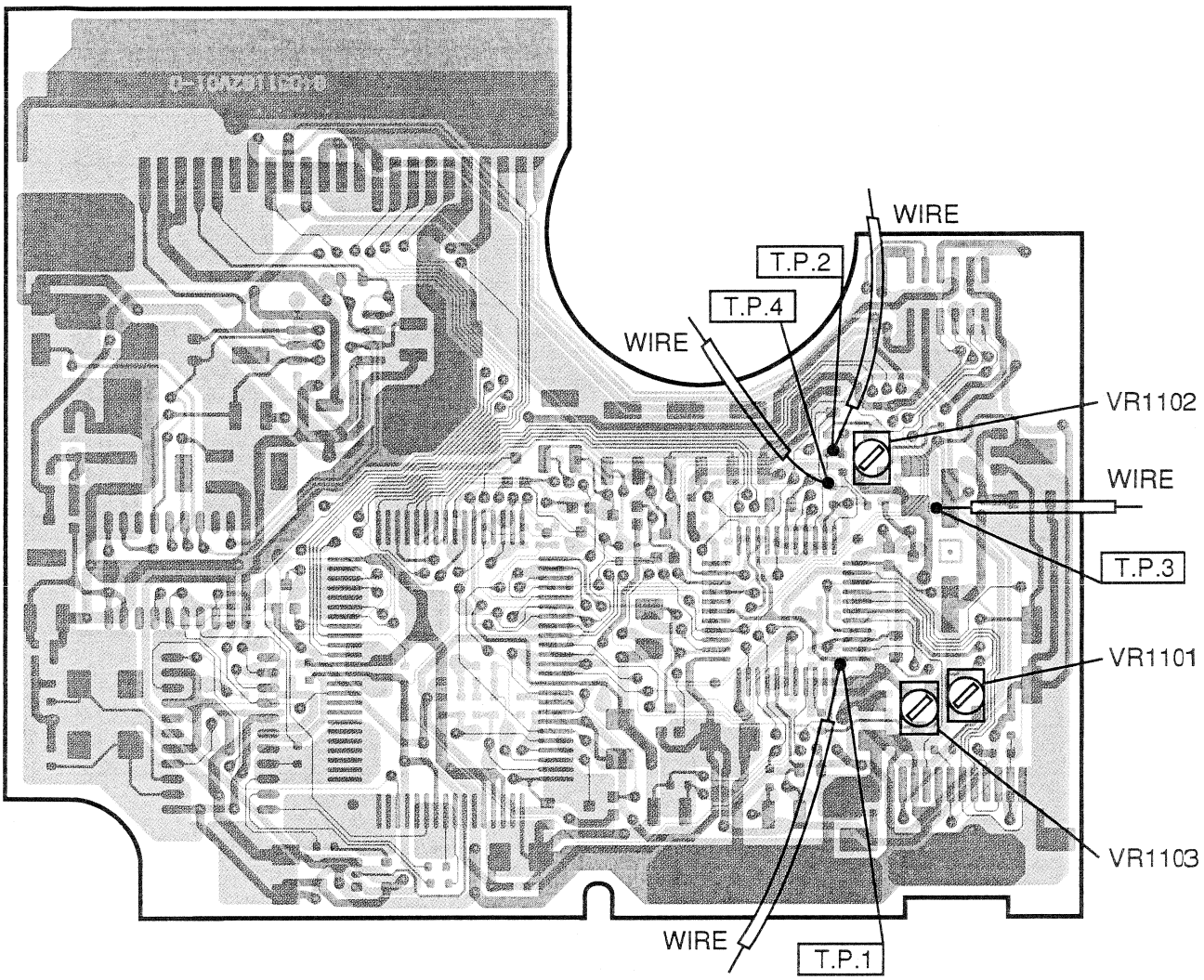
Adjustment Locations



Rear View



Bottom View



CD-LSI P.C.Board (Foil Side)

Description of IC Terminal

45258W01 (IC501)

No.	Symbol	I / O	Terminal Description
1	CE1	O	CE1 control terminal.
2	NC	—	Open.
3	$\overline{\text{DTS - MUTE}}$	O	Audio mute output terminal.
4	$\overline{\text{7073 - RESET}}$	O	Control the reset for LC7073M.
5	50KREF	O	High output when REF frequency becomes 50kHz in FM mode.
6	$\overline{\text{RESET}}$	I	System reset input terminal.
7	X2	O	Output terminal for system clock OSC.
8	X1	—	Output terminal for system clock OSC.
9	Vss	—	GND terminal for device.
10	SRAM - CE2	O	CE2 control terminal.
11	A14	O	Input / Output terminal.
12	NC	—	Open.
13	NC		
14	NC		
15	A10	O	Input / Output terminal for S · RAM address signal.
16	A9		
17	A8		
18	AD7	I / O	Input / Output terminal for S · RAM address signal.
19	AD6		
20	AD5		
21	AD4		
22	AD3		
23	AD2		
24	Vss	—	GND terminal for device.
25	AD1	I / O	Input / Output terminal for S · RAM address signal.
26	AD0		
27	LE	O	LE control terminal for latch.
28	DTS - STBY	I	Return from standby to DTS.
29	RD - CL	I	Communication data sync signal input terminal from LC7073M.
30	RD - ST	I	Data sync signal input terminal from LC7073M.
31	DATA	I	Serial data input terminal from LC7073M.

No.	Symbol	I / O	Terminal Description
32	DI	I	Serial data input terminal.
33	A - IN	I	Audio zero cross input terminal.
34	DTS - START	I	Command sync signal input from main microcomputer.
35	DTS - CMD	I	Serial data input terminal from main microcomputer.
36	NC	—	Open.
37	NC		
38	DTS - CLK	I	Communication data sync signal input terminal from main microcomputer.
39	DTS - STS	O	Serial data output terminal to main microcomputer.
40	$\overline{EA}$	I	Power supply terminal.
41	V_{DD}	—	Power supply terminal for device.
42	AV_{SS}	—	GND terminal for A / D converter.
43	AV_{REF}	I	Reference Voltage input terminal for A / D converter.
44	$\overline{ST}$	I	Stereo signal input terminal.
45	$\overline{SK}$	I	SK signal input terminal.
46	SEARCH	I	Search start level detector port.
47	$\overline{MALTI - PATH}$	I	Port detects multipath interference of station.
48	$\overline{ADJON}$	I	Port detects multipath interference of station.
49	S - METER	I	Signal meter input terminal.
50	$\overline{DK}$	I	DK signal input terminal.
51	$\overline{RDS}$	I	RDS signal input terminal.
52	PLL - CLK	O	Communication data sync signal output terminal.
53	PLL - DO	O	Serial data output terminal.
54	$\overline{LPF - SW}$	O	LPF time constant switching terminal to obtain fast response in AF search and FM seek operation.
55	IF - MUTE	O	Mute output terminal to prevent shock noises in AF search operation.
56	PLL - CE	O	Data communication control signal output terminal.
57	NC	—	Open.
58	LW	O	LW band selection terminal.
59	FM / $\overline{AM}$	O	FM / AM (MW / LW) bands selection terminal.
60	L / $\overline{D}$	O	SEEK sensitivity switch control output terminal.
61	MONO	O	Monaural ON / OFF control output terminal.
62	DTS - CE	I	Terminal to make DTS in standby status.
63	SD	I	Station detector signal input terminal for FM / AM (MW / LW).
64	WR	O	F · RAM WE control signal.

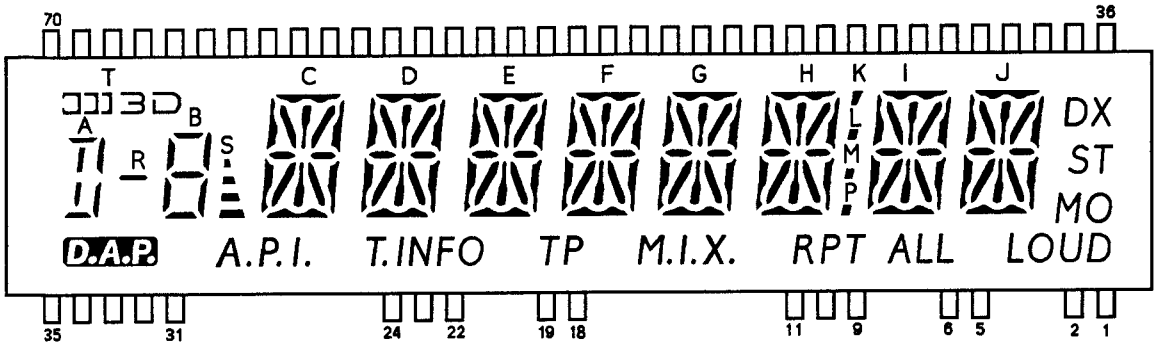
65104W03 (IC601)

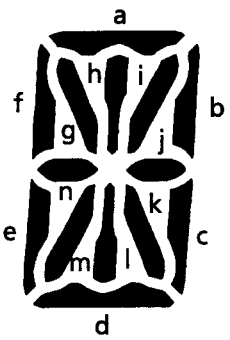
No.	Symbol	I / O	Terminal Description
1	DISC. NO.	I	Elevator Pulse Input.
2	DISC - OK	I	Guillotine Detector Photo SW Signal Input.
3	AV_{SS}	—	GND.
4	TEST	—	GND.
5	X2	O	SUB Clock 2.
6	X1	I	SUB Clock 1.
7	GND	—	GND.
8	OSC1	I	System Clock 1 (7.15MHz).
9	OSC2	O	System Clock 2 (7.15MHz).
10	$\overline{\text{RESET}}$	I	System RESET Input.
11	A - HOLD	I	ACC ON / OFF Detector.
12	B - HOLD	I	BATT ON / OFF Detector.
13	CHAG - D - I	I	BUS Line DATA Input.
14	EEP SDA	I / O	EEPROM Serial DATA Input.
15	$\overline{\text{IN - INT}}$	I	IN - INTERRPUT Input.
16	TP - ALM	O	TP - OFF Alarm Output.
17	KEY - IN	I	KEY DATA Input.
18	KEY - P / S	O	Serial / Parallel Switching Terminal.
19	EEP CLK	O	EEPROM CLOCK Output.
20	IN - PAUSE	I	IN - PAUSE Input Terminal.
21	ANTI - LED	O	LED to Light on Output. (ACC OFF)
22	BUS - OUT	O	CD Changer BUS Line DATA Output.
23	P - DOWN	—	PULL - DOWN.
24	POW - ON	O	Power - ON Output.
25	NOSE - POW	O	Front Power Control Terminal.
26	AMB / $\overline{\text{GRE}}$	O	AMBER / GREEN Switching Control Terminal.
27	LCD - ON	O	LCD Back Light Power Control Terminal.
28	OUT - REM	O	OUT - REMOTE Output.
29	F - CONT	O	Focus Servo Gain Control Output.
30	A - MUTE	O	Audio Mute Output.
31	SOURCE1	O	Audio Source Switching Output Terminal.
32	SOURCE2	O	Audio Source Switching Output Terminal.
33	P - DOWN	—	PULL - DOWN.

No.	Symbol	I / O	Terminal Description
34	P - DOWN	—	PULL - DOWN.
35	VOL - CLK	O	Volume Clock Output.
36	VOL - DATA	O	Volume DATA Output.
37	VOL - INH	O	Volume INH Output.
38	MAG - SW	I	Magazine Detector Terminal.
39	$\overline{\text{LOAD - SW}}$	I	Loading Switch.
40	$\overline{\text{HMP - SW}}$	I	Home Position Detector Terminal.
41	$\overline{\text{TRY OUT}}$	I	TRAY OUT Detector.
42	$\overline{\text{TRY IN}}$	I	TRAY IN Detector.
43	P - DOWN	—	PULL - DOWN.
44	P - DOWN	—	PULL - DOWN.
45	P - DOWN	—	PULL - DOWN.
46	P - DOWN	—	PULL - DOWN.
47	LOAD. M -	O	LOADING Motor (-) Output.
48	LOAD. M +	O	LOADING Motor (+) Output.
49	ELV. M -	O	ELEVATOR Motor (-) Output.
50	ELV. M +	O	ELEVATOR Motor (+) Output.
51	TRY. M -	O	TRAY Motor (-) Output.
52	TRY. M +	O	TRAY Motor (+) Output.
53	L - CONT	O	DS Mech Power Control Terminal.
54	V - CONT	O	CD Power Control Terminal.
55	V_{CC}	—	V_{CC}.
56	BUS 0	I / O	RF AMP (IC1101) BUS DATA 0 Input / Output.
57	BUS 1	I / O	RF AMP (IC1101) BUS DATA 1 Input / Output.
58	BUS 2	I / O	RF AMP (IC1101) BUS DATA 2 Input / Output.
59	BUS 3	I / O	RF AMP (IC1101) BUS DATA 3 Input / Output.
60	BUCK	O	RF AMP (IC1101) BUS CLOCK Signal Output.
61	CCE	O	RF AMP (IC1101) CE Signal Output.
62	LOCK	I	LOCK Status Input.
63	$\overline{\text{LIMIT - SW}}$	I	LIMIT - SW Detector.
64	DTS - CE	O	DTS μ - COM CE DATA Signal Control Output.
65	$\overline{\text{DTS - SCK}}$	O	DTS μ - COM CLOCK Signal Output.
66	DTS - STS	I	DTS μ - COM Serial DATA Signal Input.
67	DTS - CMD	O	DTS μ - COM Serial DATA Signal Output.

No.	Symbol	I / O	Terminal Description
68	LCD - CLK	O	LCD Driver Clock Output.
69	LCD - CE	O	LCD Driver CE Output.
70	LCD - DATA	O	LCD Driver DATA Output.
71	$\overline{\text{LCD - INH}}$	O	LCD Driver INH Output.
72	DTS - START	O	DTS μ - COM Serial Command DATA Signal Output.
73	DTS - STBY	O	DTS μ - COM STAND - BY Signal Output.
74	AV_{CC}	—	A / D Converter Power Supply Terminal.
75	T - SENS	I	Temperature Sensor Input.
76	NOSE	I	Front Panel Detector Terminal.
77	$\overline{\text{DTS - MUTE}}$	I	DTS μ - COM Audio Mute Signal Input.
78	DISC - P	I	DISC IN Detector Terminal.
79	KEY - A / D	I	KEY - A / D Input.
80	LOD - END	I	LOADING END Photo SW Signal Input.

LCD Display





	COM.1	COM.2	COM.3
1	DX	ST	MO
2	J-b	J-c	LOUD
3			
4			
5	J-f	J-e	J-d
6	I-b	I-c	ALL
7			
8			
9	I-f	I-e	I-d
10	H-b	H-c	RPT
11	H-f	H-e	H-d
12			
13			
14			
15			
16			
17			
18	G-f	G-e	G-d
19	F-b	F-c	TP
20			
21			
22	E-b	E-c	
23	E-f	E-e	E-d
24	D-b	D-c	T. INFO

	COM.1	COM.2	COM.3
25			
26			
27			
28			
29			
30			
31	C-b	C-c	A.P.I.
32	R	A	D.A.P.
33			COM.3
34		COM.2	
35	COM.1		
36			COM.3
37		COM.2	
38	COM.1		
39	J-i	J-j	J-k
40	J-a	J-h	J-l
41	J-g	J-n	J-m
42	I-l	I-j	J-k
43	I-a	I-h	I-l
44	I-g	I-n	I-m
45	K	L, M	p
46	H-i	H-j	H-k
47	H-a	H-h	H-l
48	H-g	H-n	H-m

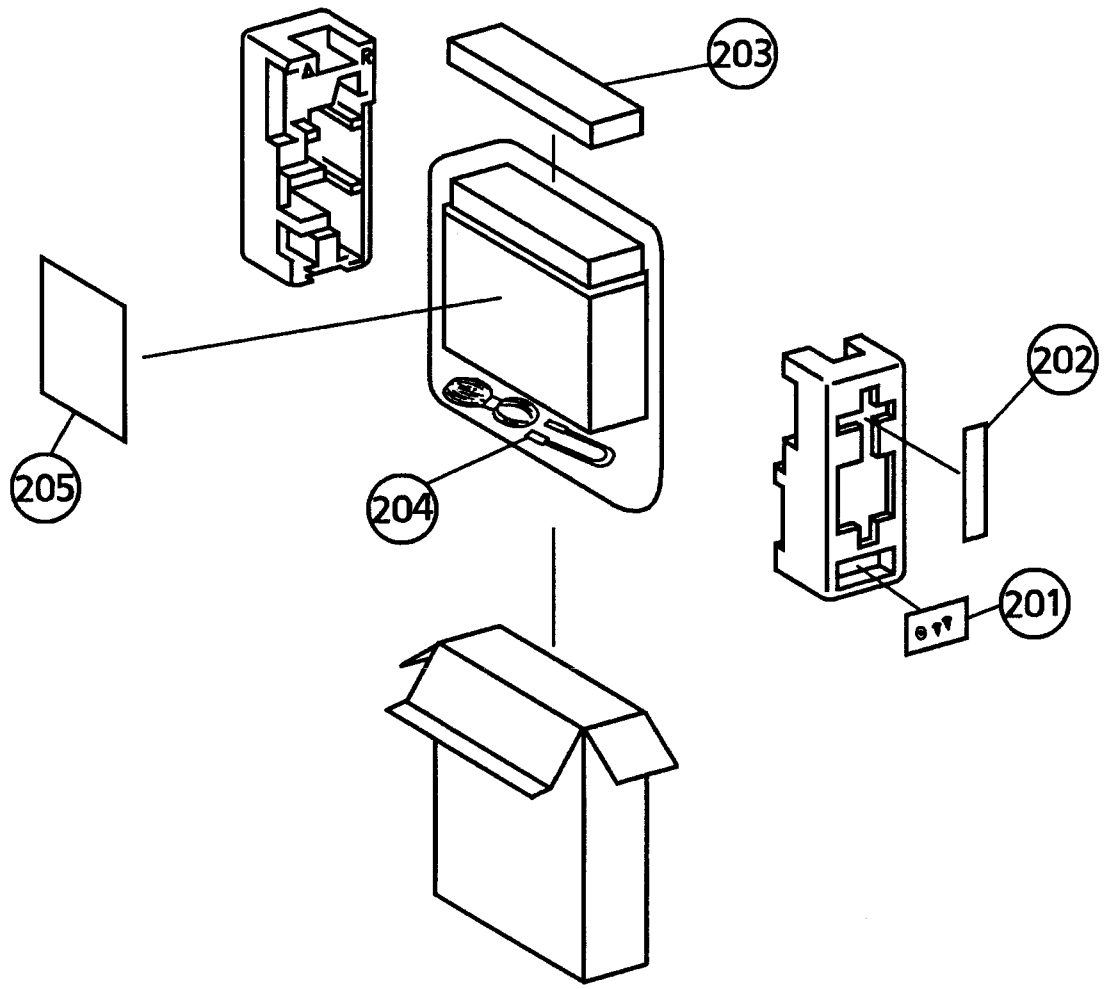
	COM.1	COM.2	COM.3
49	G-b	G-c	M.I.X.
50	G-i	G-j	G-k
51	G-a	G-h	G-l
52	G-g	G-n	G-m
53	F-i	F-j	F-k
54	F-a	F-h	F-l
55	F-g	F-n	F-m
56	F-f	F-e	F-d
57	E-i	E-j	E-k
58	E-a	E-h	E-l
59	E-g	E-n	E-m
60	D-i	D-j	D-k
61	D-a	D-h	D-l
62	D-g	D-n	D-m
63	D-f	D-e	D-d
64	C-i	C-j	C-k
65	C-a	C-h	C-l
66	C-g	C-n	C-m
67	C-f	C-e	C-d
68	S	B-b	B-c
69	B-a	B-n,k	B-d
70	T	B-f	B-e

Packing Assembly Parts List

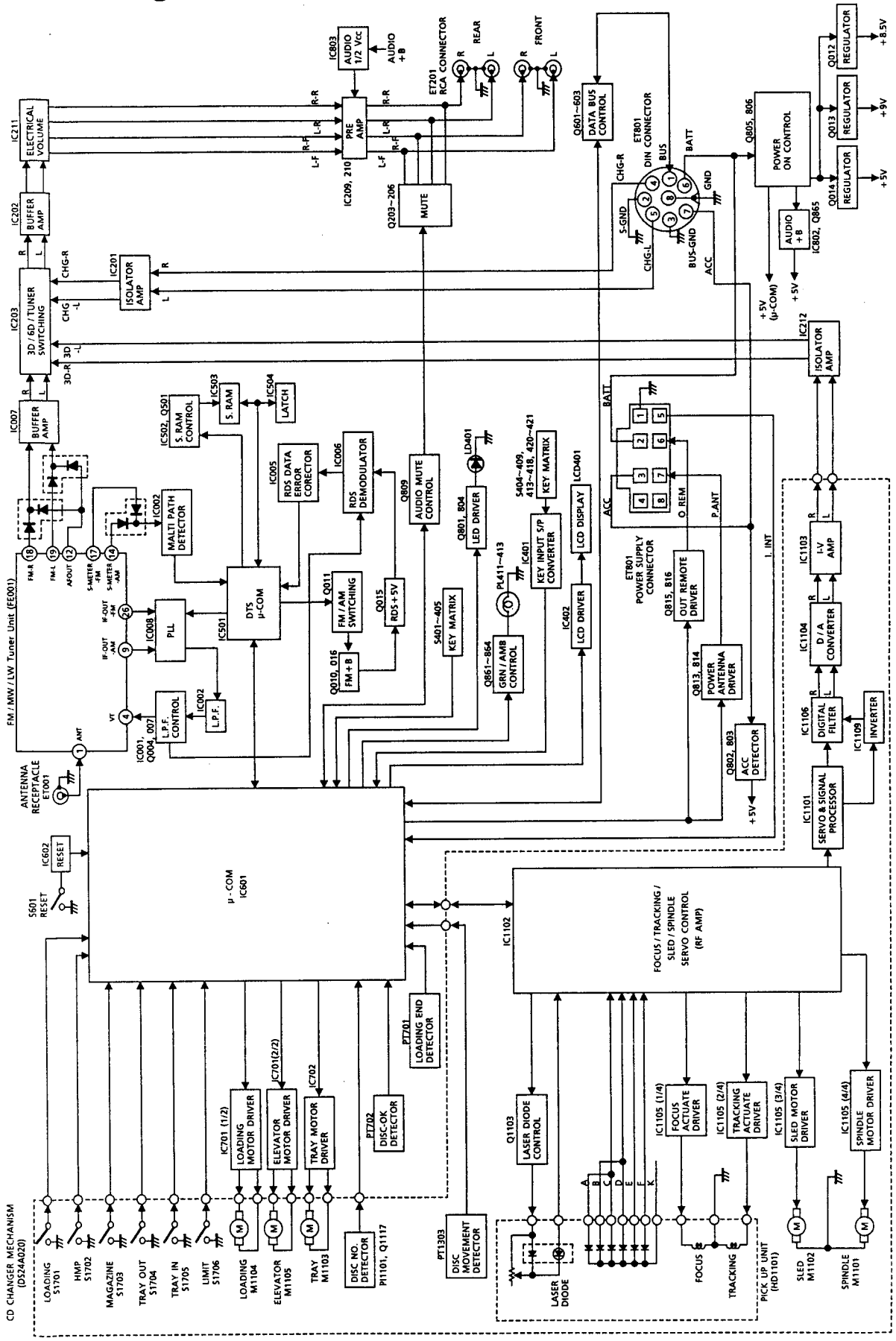
Symbol No.	Part No.	Description
201	01V53600W33	Assy., Kit Installation
202	07B64552F01	Bracket, Strap Receiver
203	15D51292W03	Carrying, Case
204	01T55566W01	Assy., Power Supply Connector
205-1	68P50390W90	Owner's Manual
205-2	68P50390W91	Installation Manual
205-3	54A50936W01	Label, Round

Symbol No.	Part No.	Description

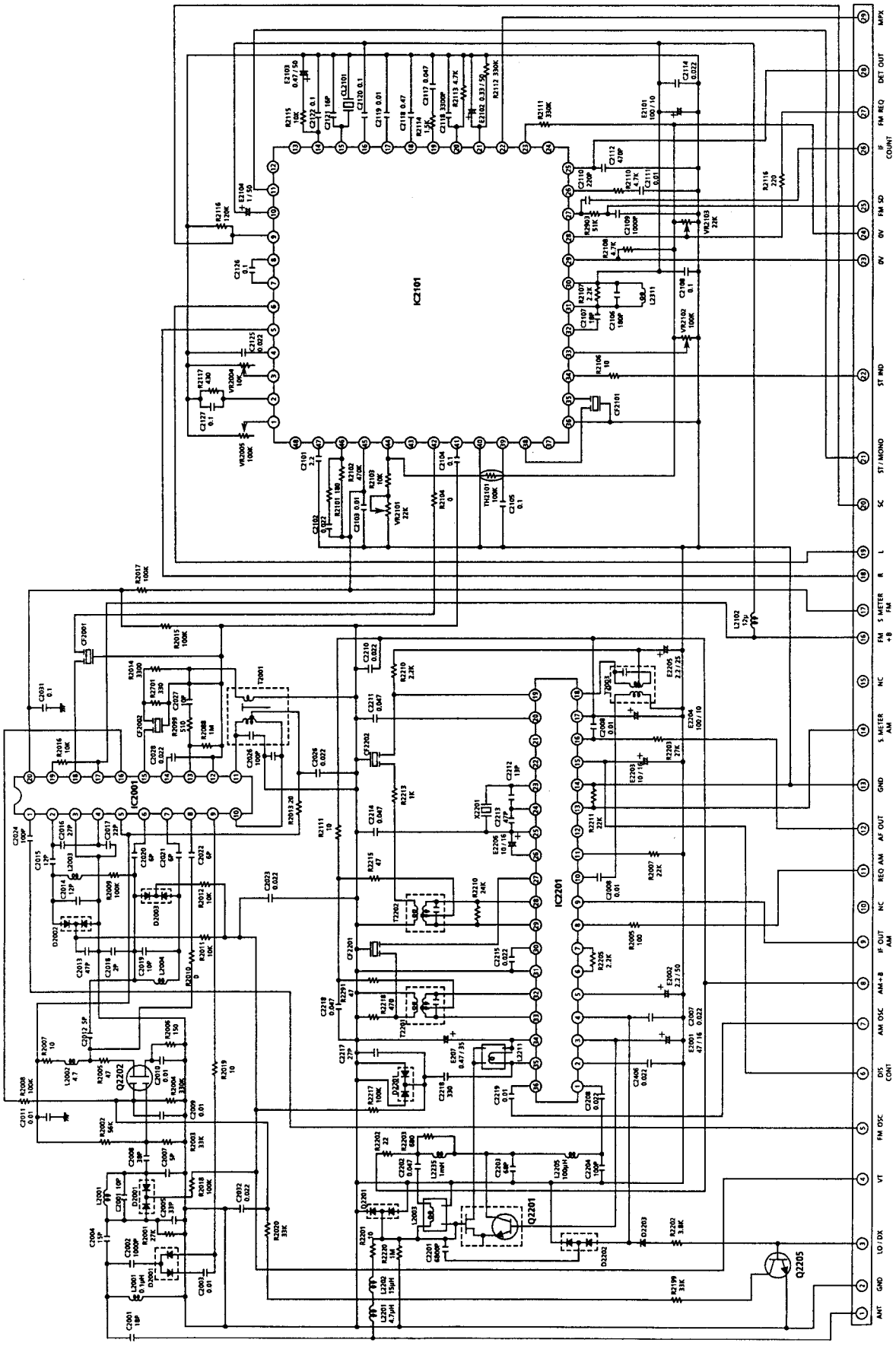
Packing Method View



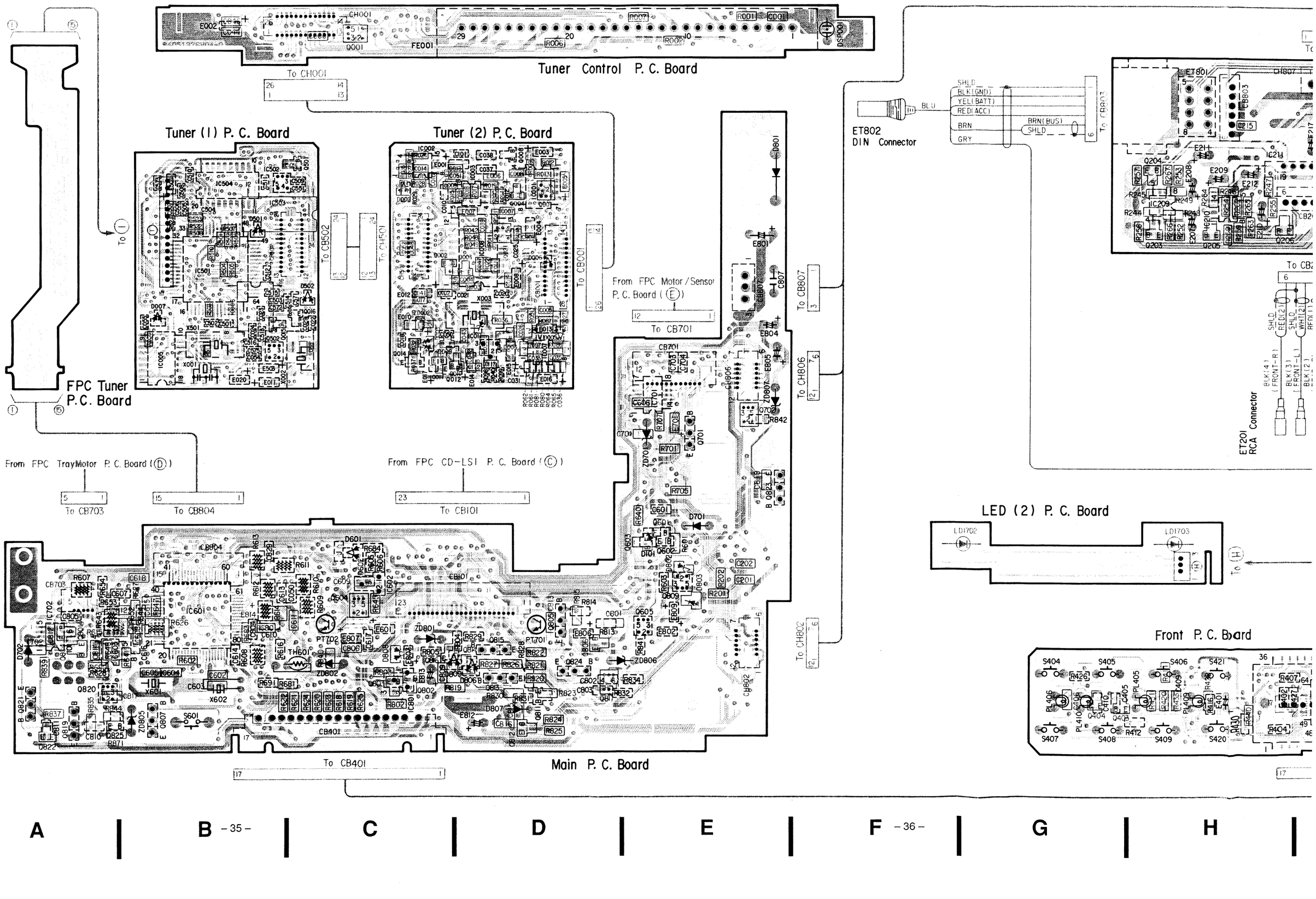
Block Diagram



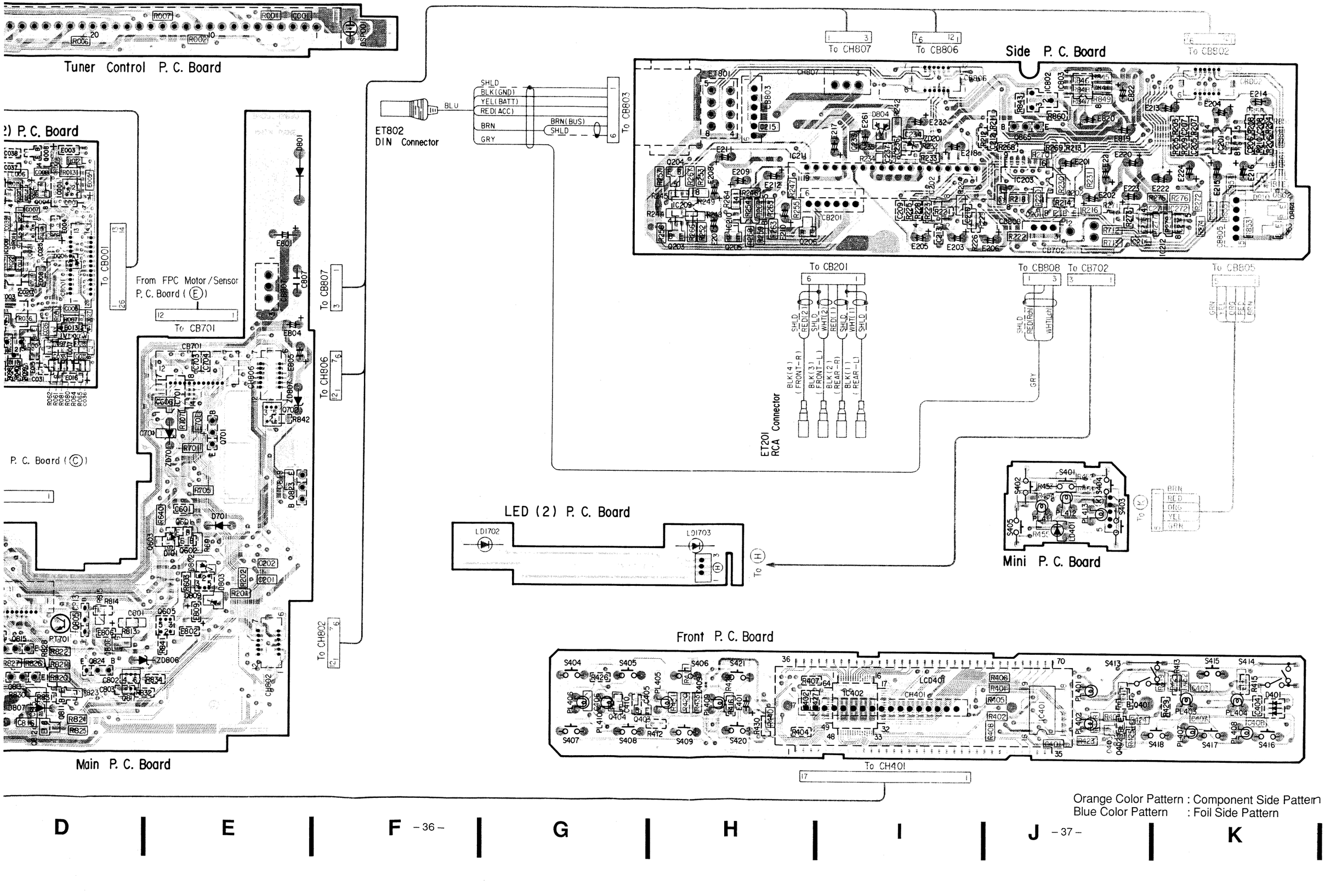
Tuner Schematic Diagram



Parts Layout on P.C. Boards and Wiring Diagram (1/2)



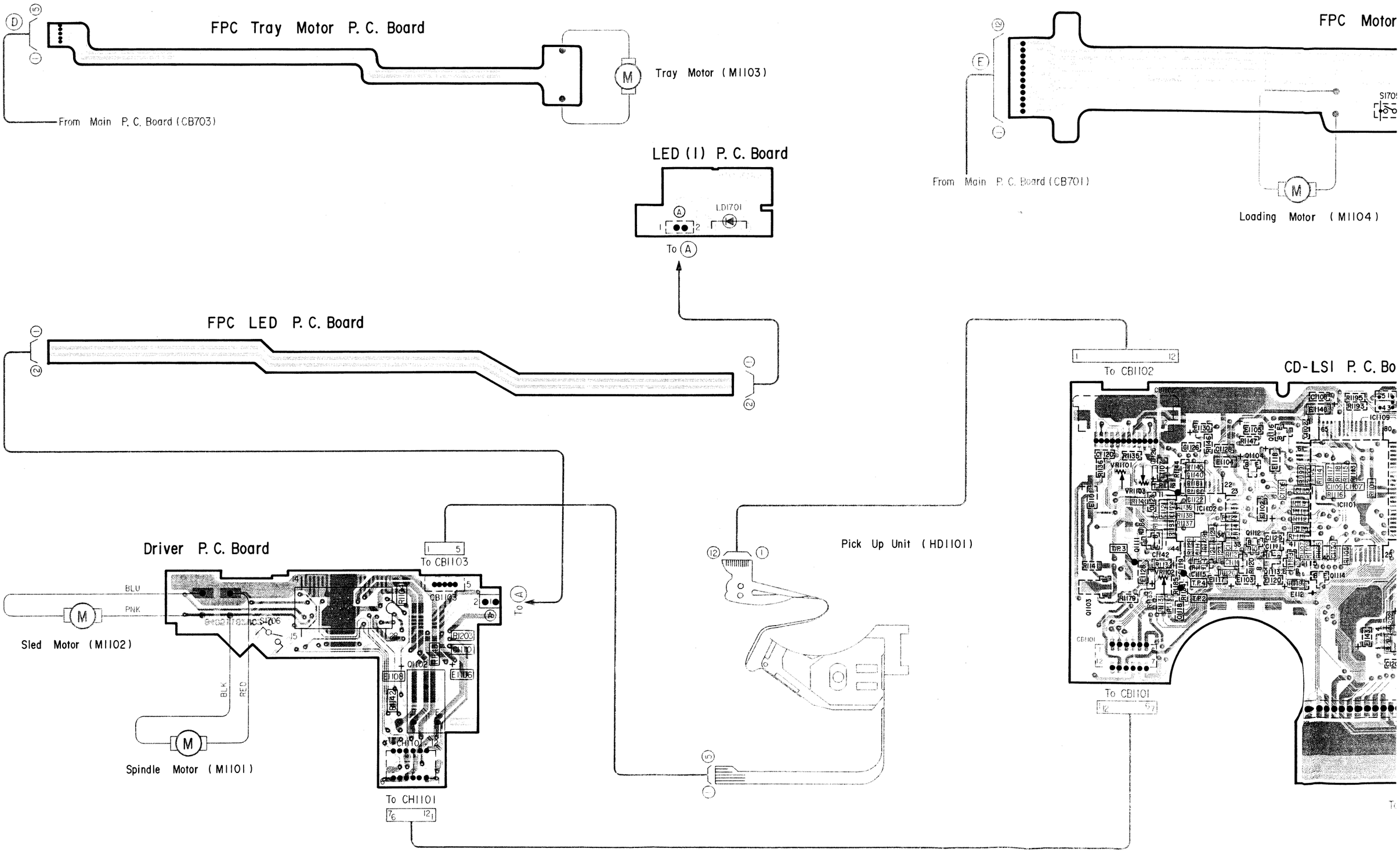
)iagram (1/2)


Tuner Control P. C. Board
BS700
R007
R004
C001
R006
R002
20
10
1
To CB001
From FPC Motor/Sensor P. C. Board (E)
To CB701
To CH807
To CB806
To CB803
To CH806
To CH802
ET802
DIN Connector
BLU
SHLD
BLK(GND)
YEL(BATT)
RED(ACC)
BRN
GRY
BRN(BUS)
SHLD
Side P. C. Board
To CB802
To CB201
To CB808
To CB702
To CB805
ET201
RCA Connector
BLK(4) (FRONT-R)
BLK(3) (FRONT-L)
BLK(2) (REAR-R)
BLK(1) (REAR-L)
SHLD
RED(2)
WHT(2)
RED(1)
WHT(1)
GRY
LED (2) P. C. Board
LD1702
LD1703
To (H)
Mini P. C. Board
S401
S402
S403
S405
PL411
PL412
D401
R452
R455
BRN
RED
ORG
YEL
GRN
P. C. Board (C)
Main P. C. Board
Front P. C. Board
S404
S405
S406
S421
S407
S408
S409
S420
S413
S415
S414
S418
S417
S416
LCD401
IC402
CH401
To CH401
Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

7982R 7982R

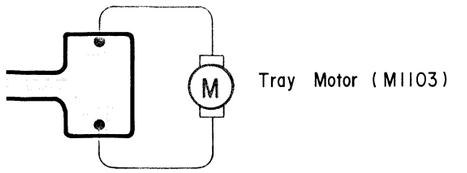
Parts Layout on P.C. Boards and Wiring Diagram (2/2)

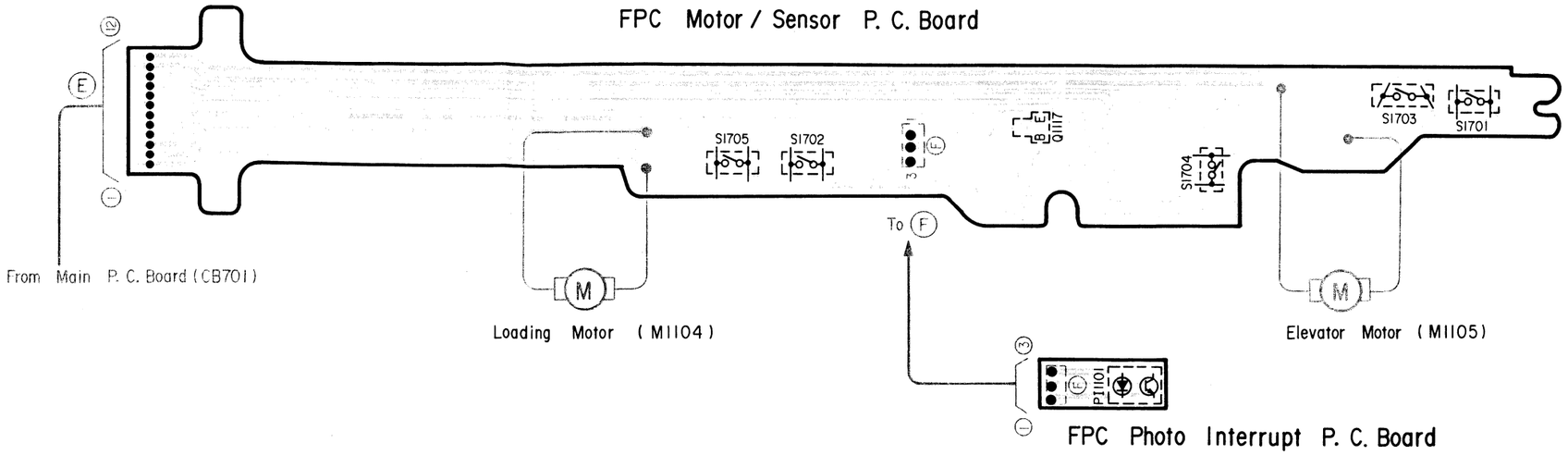
All P.C. Boards viewed from soldered side.

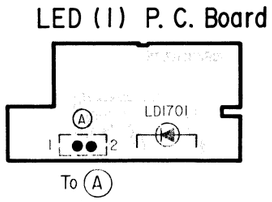


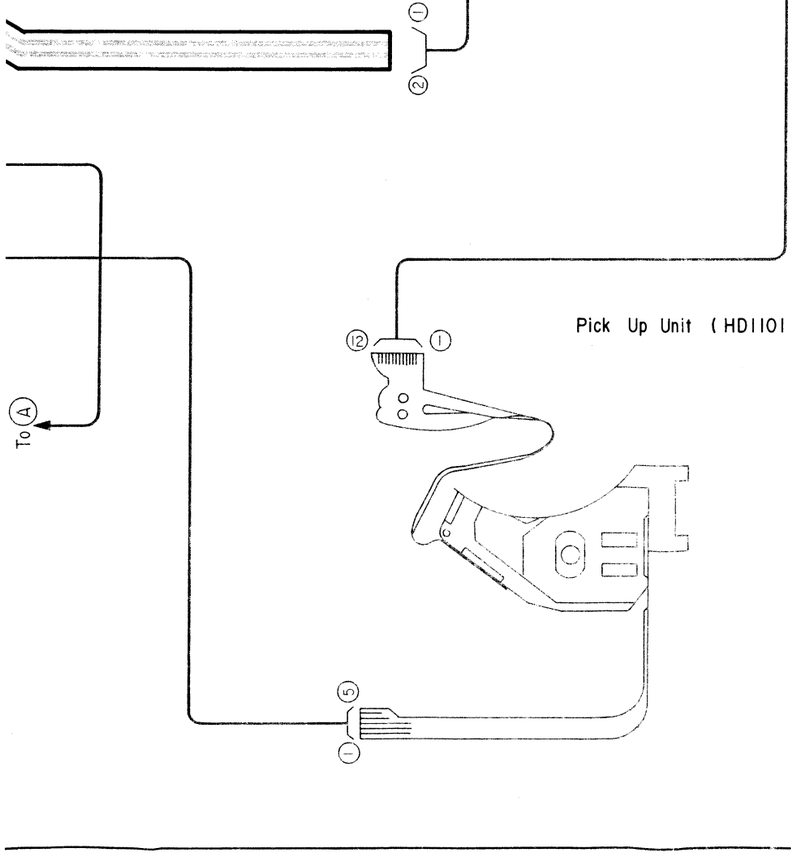
iagram (2/2) All P.C. Boards viewed from soldered side.

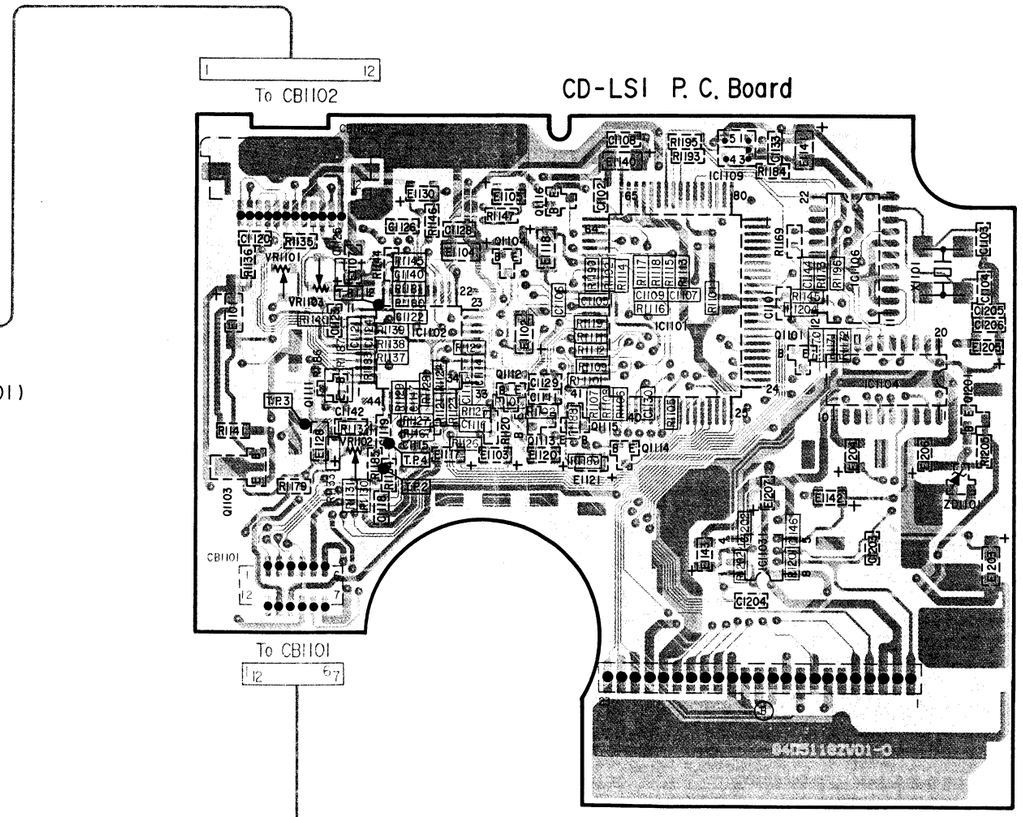
Orange Color Pattern : Component Side Pattern
Blue Color Pattern : Foil Side Pattern

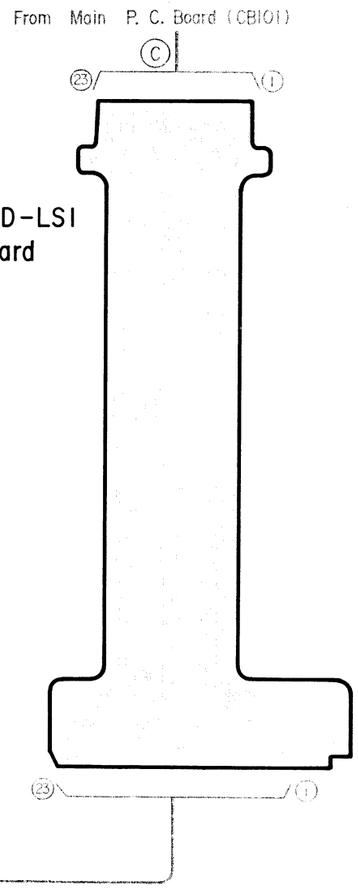












Schematic Diagram (1/4)

IC	IC601	IC602 IC603	IC701
Transistor (Q,PT,PI)	Q1117 PI1101 PT701 PT702	IC801 Q803 Q802 Q603 Q604 Q819 Q809 Q807 Q602 Q825 Q801 Q804 Q820 Q601	Q811 Q812 Q824 Q701 Q814 Q813 Q605 Q816 Q815 Q821

Main P.C.Board

FPC Motor/Sensor P.C.Board

FPC Photo Interrupt P.C.Board

From PLL P.C.Board

From CD-LSI P.C.Board (A)

From Front P.C.Board (CH401)

IC601 65104W03 μ-COM

IC602 S-8052HNM-CR

IC603 X24LC01SI

IC701 LB1836M

IC801 S-8054ALR-LN

Q1117 2SA1037K

Q701 2SD1994A

Q604 FMC2

Q809 FMC2

Q807 2SD2008

Q804 DTA123YU

Q801 DTC124EU

Q811 2SA1576

Q812 DTC124EU

Q814 DTC124EU

Q816 DTC124EU

Q813 2SB1243

Q815 2SB1243

Q803 2SC4081

Q602 DTA124EU

Q601 DTC124EU

Q603 DTC124EU

Q819 2SD1994A

Q802 DTA114EU

Q820 FMC2

Q825 2SC2412K

Q824 2SD1994A

Q605 FMC2

Q821 2SB124

AUDIO MUTE CONTROL

ELEVATOR,LOADING MOTOR DRIVER

V.STAVILIZER

LED DRIVER

PROTECTION CIRCUIT

POWER ANTENNA DRIVER

OUT REM DRIVER

SWITCHING

DISC-OK DETECTOR

LOAD-END DETECTOR

ACC DETECTOR

DATA BUS CONTROL

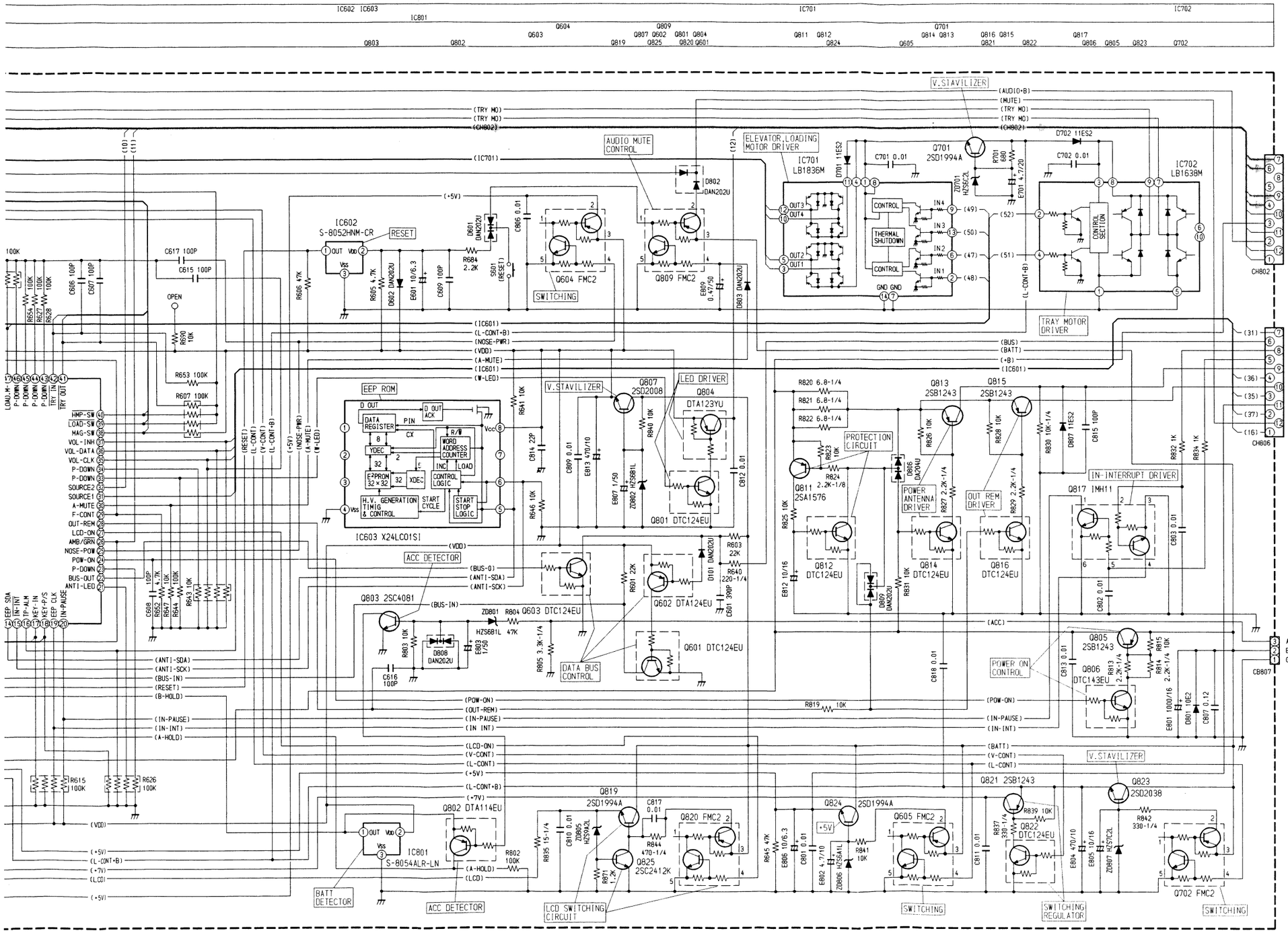
POWER ON CONTROL

BATT DETECTOR

LCD SWITCHING CIRCUIT

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1,000,000}$



IC603

1	NC
2	NC
3	NC
4	0.03V
5	0V / 5V
6	0V / 5V
7	NC
8	5.1V

IC701

1	5.78V
2	0.02V
3	0.85V
4	5.79V
5	0.75V
6	0.01V
7	0.01V
8	NC
9	0.01V
10	0.97V
11	5.57V
12	0.98V
13	0.01V
14	0.01V

IC702

1	0.03V
2	0.03V
3	7.02V
4	0.03V
5	0.03V
6	NC
7	0.84V
8	7.14V
9	0.78V
10	NC

IC602

1	5.09V
2	5.12V
3	0.03V

IC801

1	4.78V
2	5.13V
3	0.03V

IC601

1	4.74V	17	2.02V	33	0.03V	49	0.03V	65	0V / 5.1V
2	4.69V	18	0.05V	34	0.03V	50	0.01V	66	0V / 4.8V
3	0.02V	19	5V	35	0.03V	51	0.03V	67	0V / 5V
4	0.02V	20	5.11V	36	0.03V	52	0.02V	68	0V / 5V
5	CLK	21	0.03V	37	0.03V	53	5.08V	69	0V / 5V
6	CLK	22	0.01V	38	5.07V	54	5.09V	70	5.1V
7	0.02V	23	0.03V	39	0.01V	55	5.11V	71	0.03V
8	CLK	24	5.06V	40	4.77V	56	0V / 4.5V	72	0.03V
9	2.41V	25	5.1V	41	4.78V	57	4V / 4.5V	73	5.11V
10	5.06V	26	0.06V	42	0.01V	58	0V / 4.5V	74	4.62V
11	4.76V	27	5.1V	43	5.1V	59	0V / 4.5V	75	5.62V
12	4.77V	28	5.11V	44	0.04V	60	0V / 5V	76	0.03V
13	5.1V	29	0.23V	45	4.59V	61	0V / 5V	77	0.03V
14	4.64V	30	5.08V	46	0.03V	62	5.01V	78	4.73V
15	4.82V	31	5.12V	47	0.01V	63	4.77V	79	5.11V
16	0.03V	32	5.08V	48	0.03V	64	0V / 5.1V	80	4.73V

	1	2	3	4	5
Q604	0.03V	5.11V	5.14V	5.12V	0.03V
Q605	0.02V	15.52V	15.53V	5.11V	0.01V
Q702	0.01V	15.58V	15.53V	5.12V	0.01V
Q809	15.51V	0.54V	15.81V	0.01V	0.01V
Q817	5.13V	0.01V	0.01V	5.11V	0V
Q820	0.04V	15.51V	15.59V	5.12V	0.03V

	E	C	B		E	C	B
Q501	5V	0V	0V	Q811	15.51V	0.01V	15.39V
Q601	0.01V	5.13V	0.01V	Q812	0.01V	15.39V	0.01V
Q602	5.15V	0.01V	5.12V	Q813	15.51V	15.39V	14.75V
Q603	0.01V	15.49V	0.01V	Q814	0.01V	0.03V	10.83V
Q701	5.82V	7.43V	6.19V	Q815	15.51V	15.39V	14.79
Q801	0.03V	5.13V	0.03V	Q816	0.01V	0.06V	3.76V
Q802	4.79V	4.78V	0.05V	Q819	8.79V	15.32V	9.32V
Q803	0.02V	0.04V	0.66V	Q821	7.21V	7.19V	6.57V
Q804	5.14V	0.37V	5.14V	Q822	0.01V	0.12V	5.11V
Q805	15.79V	15.67V	15.02V	Q823	7.45V	15.81V	7.82V
Q806	0.01V	0.04V	5.07V	Q824	4.81V	15.68V	5.41V
Q807	5.14V	15.81V	5.69V	Q825	0.01V	9.31V	9.18V

[Measuring Conditions]

1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : CD : Be playing back the 2nd Music of the test CD (YEDS-18)
   Tuner : No signal input
   FM : 98.1MHz
   MW : 999kHz
   LW : 216kHz

Schematic Diagram (1/4)

IC	IC601	IC602 IC603	IC701
Transistor (Q,PT,PI)	Q1117 PI1101 PT701 PT702	IC801 Q803 Q802 Q604 Q603 Q809 Q807 Q602 Q825 Q801 Q804 Q820 Q601 Q819 Q605	Q811 Q812 Q824 Q701 Q814 Q813 Q816 Q815 Q821

Main P.C.Board

CB703

TRAY MOTOR M1103

FPC Motor/Sensor P.C.Board

M1105 ELEVATOR MOTOR

M1104 LOADING MOTOR

S1705 S1702 S1704 S1701 S1703

Q1117 2SA1037K

S1701:LOD SW
S1702:HMP SW
S1703:MAG SW
S1704:TRY OUT SW
S1705:TRY IN SW

FPC Photo Interrupt P.C.Board

PI1101 PLI-13

CB701 CH701

IC601 65104W03 μ-COM

IC602 S-8052HNM-CR RESET

IC603 X24LC01SI EEP ROM

IC701 LB1836M

IC801 S-8054ALR-LN

Q701 2SD1994A

Q804 DTA123YU

Q807 2SD2008

Q809 FMC2

Q604 FMC2 SWITCHING

Q801 DTC124EU

Q812 DTC124EU

Q814 DTC124EU

Q816 DTC124EU

Q602 DTA124EU

Q601 DTC124EU

Q803 2SC4081

Q802 DTA114EU

Q819 2SD1994A

Q820 FMC2 2

Q824 2SD1994A

Q605 FMC2 2

Q811 2SA1576

Q813 2SB1243

Q815 2SB1243

Q821 2SB1

Q825 2SC2412K

PT701 PS3062

PT702 PS3062

DISC-DK DETECTOR

LOAD-END DETECTOR

BATT DETECTOR

ACC DETECTOR

AUDIO MUTE CONTROL

ELEVATOR,LOADING MOTOR DRIVER

V.STAVILIZER

LED DRIVER

PROTECTION CIRCUIT

POWER ANTENNA DRIVER

OUT REM DRIVER

DATA BUS CONTROL

LCD SWITCHING CIRCUIT

SWITCHING

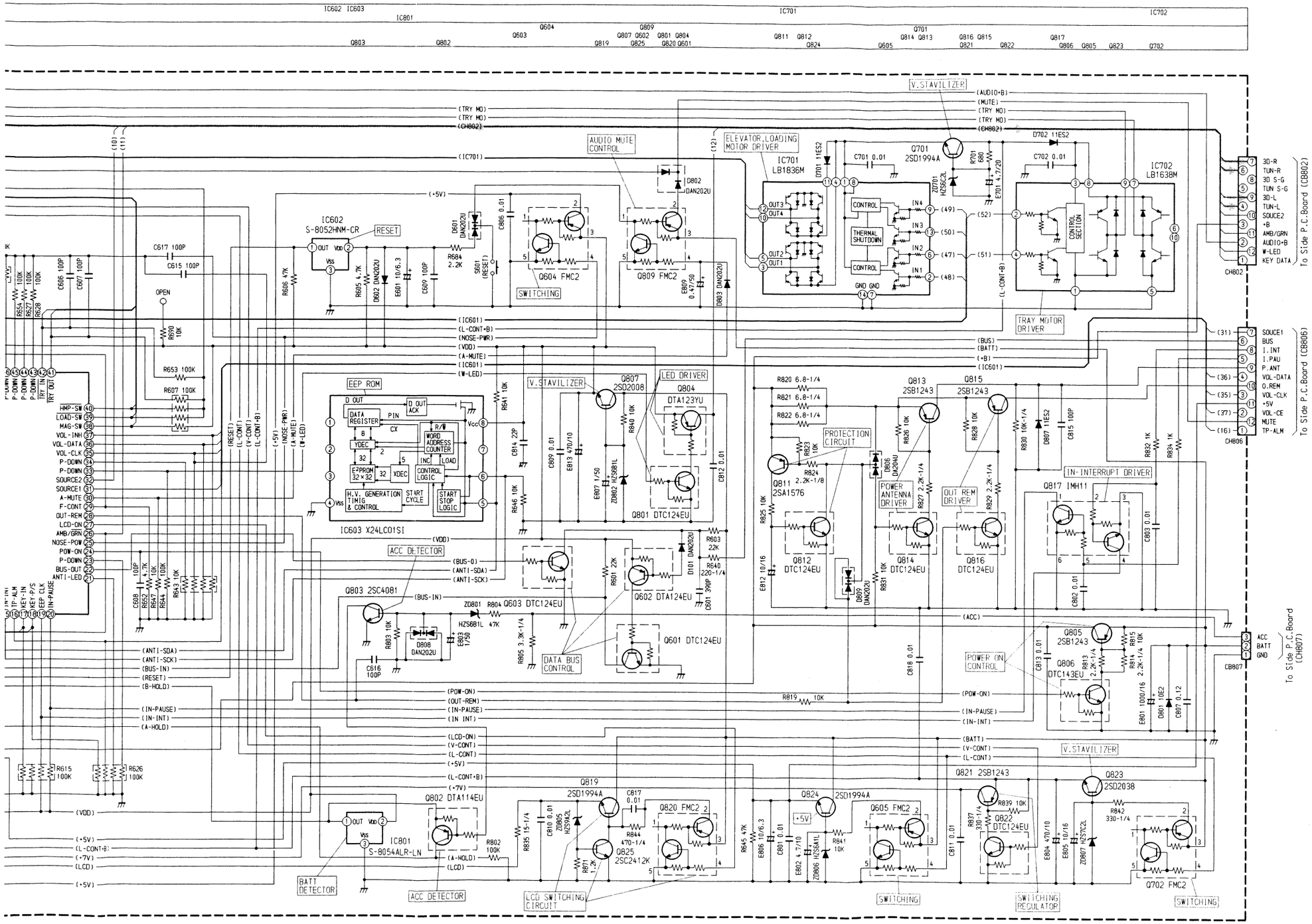
From PLL P.C.Board

From CD-LSI P.C.Board (A)

From Front P.C.Board (CH401)

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$



IC603

1	NC
2	NC
3	NC
4	0.03V
5	0V / 5V
6	0V / 5V
7	NC
8	5.1V

IC701

1	5.78V
2	0.02V
3	0.85V
4	5.79V
5	0.75V
6	0.01V
7	0.01V
8	NC
9	0.01V
10	0.97V
11	5.57V
12	0.98V
13	0.01V
14	0.01V

IC702

1	0.03V
2	0.03V
3	7.02V
4	0.03V
5	0.03V
6	NC
7	0.84V
8	7.14V
9	0.78V
10	NC

IC602

1	5.09V
2	5.12V
3	0.03V

IC801

1	4.78V
2	5.13V
3	0.03V

IC601

1	4.74V	17	2.02V	33	0.03V	49	0.03V	65	0V / 5.1V
2	4.69V	18	0.05V	34	0.03V	50	0.01V	66	0V / 4.8V
3	0.02V	19	5V	35	0.03V	51	0.03V	67	0V / 5V
4	0.02V	20	5.11V	36	0.03V	52	0.02V	68	0V / 5V
5	CLK	21	0.03V	37	0.03V	53	5.08V	69	0V / 5V
6	CLK	22	0.01V	38	5.07V	54	5.09V	70	5.1V
7	0.02V	23	0.03V	39	0.01V	55	5.11V	71	0.03V
8	CLK	24	5.06V	40	4.77V	56	0V / 4.5V	72	0.03V
9	2.41V	25	5.1V	41	4.78V	57	4V / 4.5V	73	5.11V
10	5.06V	26	0.06V	42	0.01V	58	0V / 4.5V	74	4.62V
11	4.76V	27	5.1V	43	5.1V	59	0V / 4.5V	75	5.62V
12	4.77V	28	5.11V	44	0.04V	60	0V / 5V	76	0.03V
13	5.1V	29	0.23V	45	4.59V	61	0V / 5V	77	0.03V
14	4.64V	30	5.08V	46	0.03V	62	5.01V	78	4.73V
15	4.82V	31	5.12V	47	0.01V	63	4.77V	79	5.11V
16	0.03V	32	5.08V	48	0.03V	64	0V / 5.1V	80	4.73V

	1	2	3	4	5
Q604	0.03V	5.11V	5.14V	5.12V	0.03V
Q605	0.02V	15.52V	15.53V	5.11V	0.01V
Q702	0.01V	15.58V	15.53V	5.12V	0.01V
Q809	15.51V	0.54V	15.81V	0.01V	0.01V
Q817	5.13V	0.01V	0.01V	5.11V	0V
Q820	0.04V	15.51V	15.59V	5.12V	0.03V

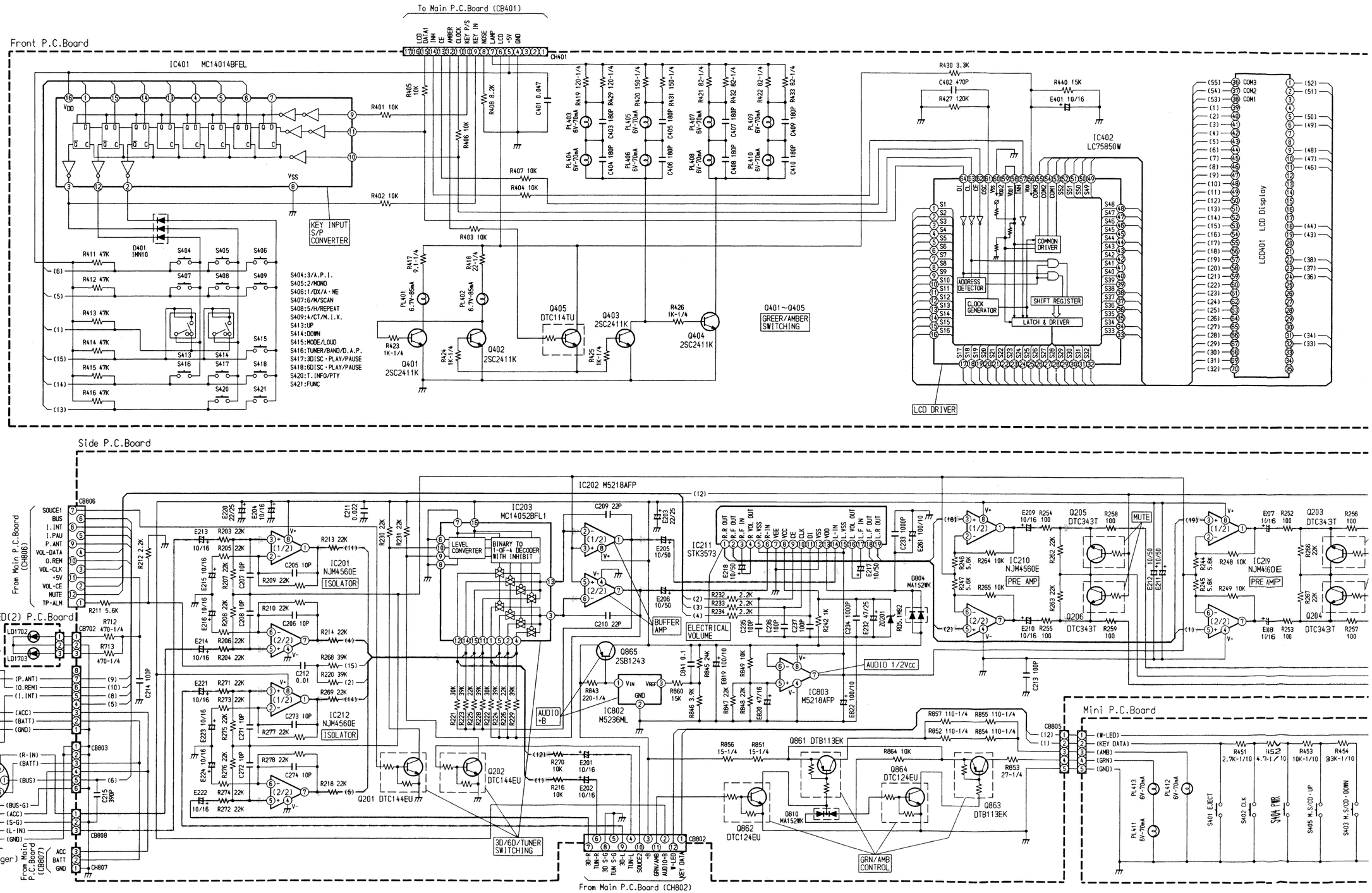
	E	C	B		E	C	B
Q501	5V	0V	0V	Q811	15.51V	0.01V	15.39V
Q601	0.01V	5.13V	0.01V	Q812	0.01V	15.39V	0.01V
Q602	5.15V	0.01V	5.12V	Q813	15.51V	15.39V	14.75V
Q603	0.01V	15.49V	0.01V	Q814	0.01V	0.03V	10.83V
Q701	5.82V	7.43V	6.19V	Q815	15.51V	15.39V	14.79
Q801	0.03V	5.13V	0.03V	Q816	0.01V	0.06V	3.76V
Q802	4.79V	4.78V	0.05V	Q819	8.79V	15.32V	9.32V
Q803	0.02V	0.04V	0.66V	Q821	7.21V	7.19V	6.57V
Q804	5.14V	0.37V	5.14V	Q822	0.01V	0.12V	5.11V
Q805	15.79V	15.67V	15.02V	Q823	7.45V	15.81V	7.82V
Q806	0.01V	0.04V	5.07V	Q824	4.81V	15.68V	5.41V
Q807	5.14V	15.81V	5.69V	Q825	0.01V	9.31V	9.18V

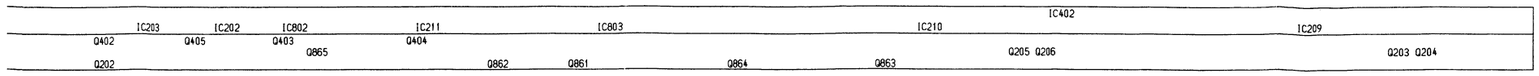
[Measuring Conditions]

1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : CD : Be playing back the 2nd Music of the test CD (YEDS-18)
   Tuner : No signal input
   FM : 98.1MHz
   MW : 999kHz
   LW : 216kHz

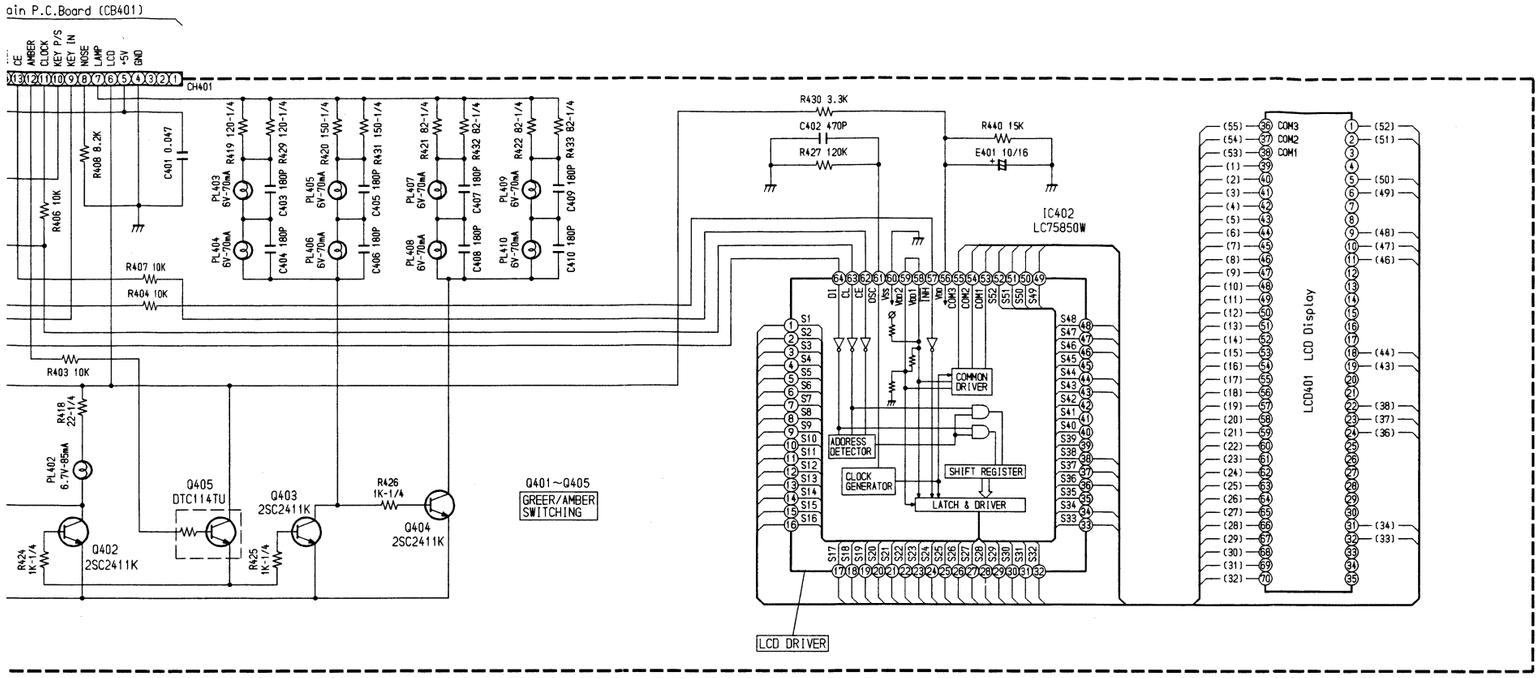
Schematic Diagram (2/4)

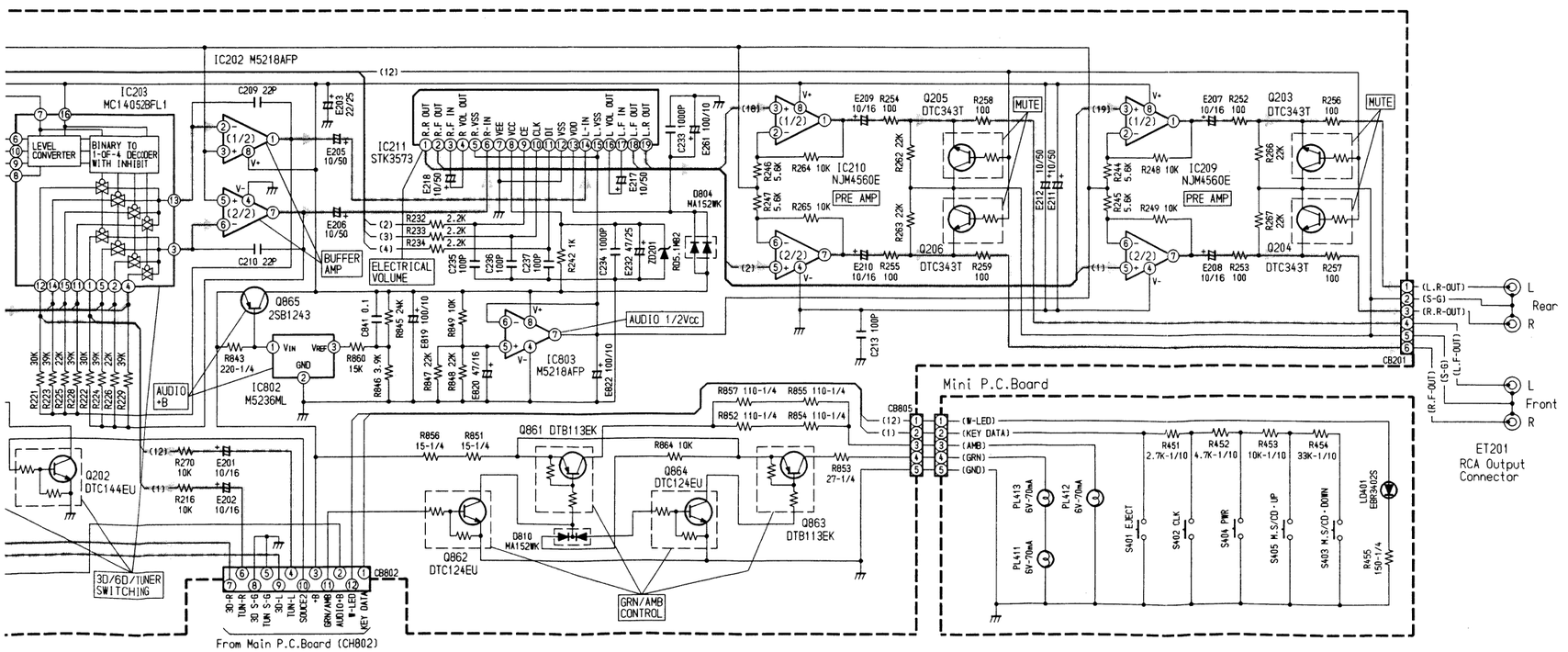
IC	IC401	IC201 IC212	IC203	IC202	IC802	IC211	IC803	IC210	IC402	IC209
Transistor (Q)	Q401 Q201	Q402 Q202	Q405	Q403 Q865	Q404	Q862	Q861	Q864	Q863	Q205 Q206	Q203 Q204





ain P.C.Board (CB401)





NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1{,}000{,}000}$

IC201

1	4.69V
2	4.69V
3	4.69V
4	0V
5	4.69V
6	4.69V
7	4.69V
8	8.96V

IC202

1	4.68V
2	4.68V
3	4.68V
4	0V
5	4.68V
6	4.68V
7	4.68V
8	8.96V

IC203

1	4.68V	9	0V
2	NC	10	8.95V
3	4.69V	11	4.68V
4	4.68V	12	4.67V
5	4.68V	13	4.18V
6	0V	14	4.69V
7	0V	15	NC
8	0V	16	8.96V

IC209

1	4.7V
2	4.7V
3	4.7V
4	0V
5	4.7V
6	4.7V
7	4.7V
8	8.96V

IC210

1	4.7V
2	4.7V
3	4.7V
4	0V
5	4.7V
6	4.7V
7	4.7V
8	8.96V

IC211

1	4.67V	11	0V / 5V
2	4.67V	12	0V
3	4.67V	13	8.29V
4	4.68V	14	SIG
5	4.68V	15	4.68V
6	SIG	16	4.68V
7	0V	17	4.68V
8	5.02V	18	4.68V
9	0V / 5V	19	4.68V
10	0V / 5V		

IC212

1	4.69V
2	4.69V
3	4.69V
4	0V
5	4.69V
6	4.69V
7	4.69V
8	8.96V

IC401

1	0.08V	9	0V / 5V
2	0V / 5.1V	10	0V / 5V
3	0V / 5V	11	0V / 5V
4	NC	12	0V / 5V
5	5.08V	13	5.08V
6	5.08V	14	5.08V
7	NC	15	5.08V
8	0V / 5V	16	5.1V

IC802

1	14.94V
2	0V
3	1.23V

IC803

1	NC
2	NC
3	NC
4	0V
5	4.68V
6	4.68V
7	4.68V
8	8.95V

IC402

1	PS	17	PS	33	PS	49	PS
2	PS	18	PS	34	PS	50	PS
3	PS	19	PS	35	PS	51	PS
4	PS	20	PS	36	PS	52	PS
5	PS	21	PS	37	PS	53	PS
6	PS	22	PS	38	PS	54	PS
7	PS	23	PS	39	NC	55	PS
8	PS	24	PS	40	NC	56	5.1V
9	PS	25	PS	41	NC	57	5.12V
10	PS	26	PS	42	NC	58	PS
11	PS	27	PS	43	PS	59	PS
12	PS	28	PS	44	PS	60	PS
13	PS	29	PS	45	NC	61	PS
14	PS	30	PS	46	PS	62	PS
15	PS	31	PS	47	PS	63	PS
16	PS	32	PS	48	PS	64	PS

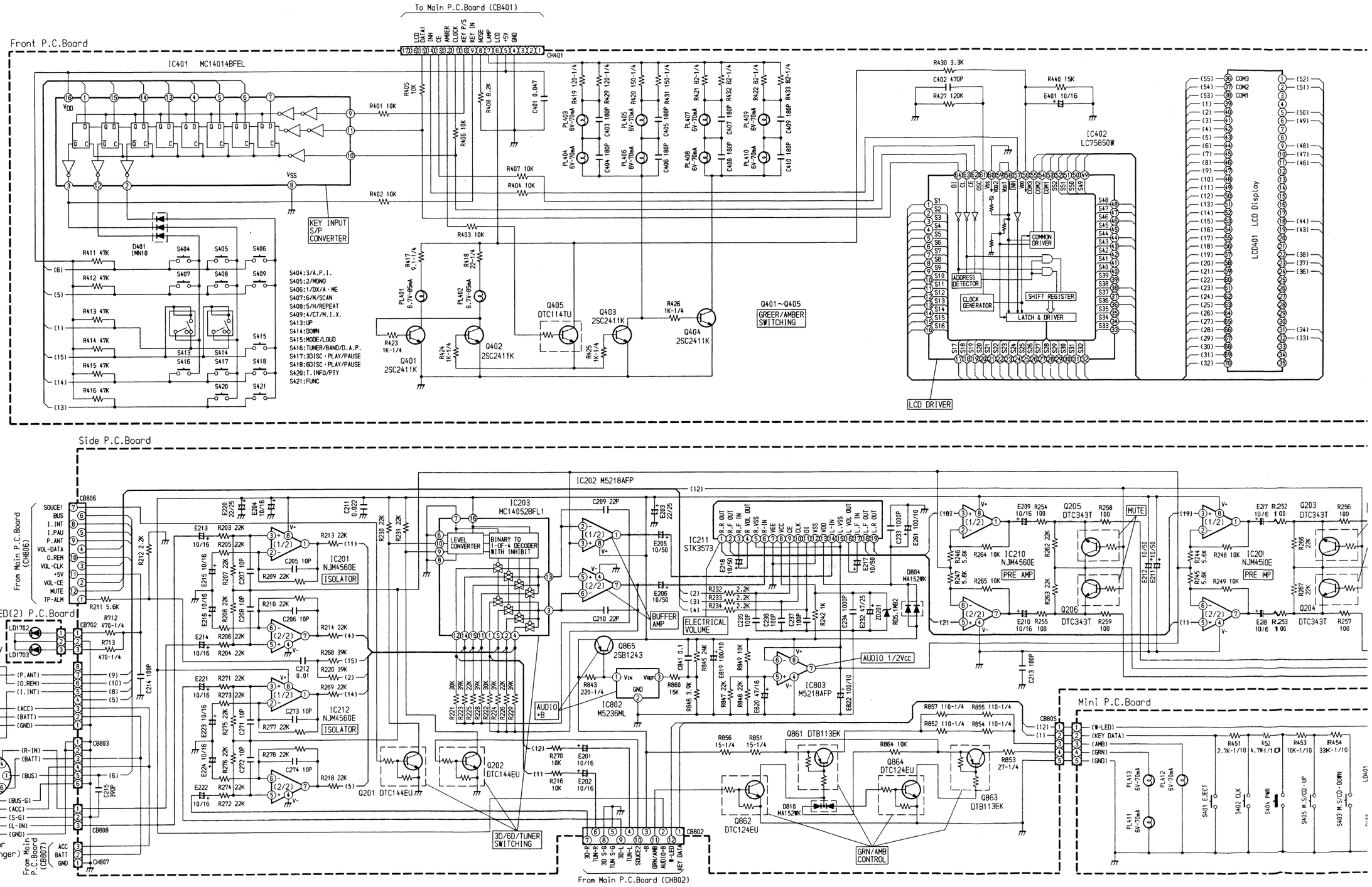
	E	C	B
Q201	0V	8.96V	0V
Q202	0V	0V	5.12V
Q203	SIG	0V	SIG
Q204	SIG	0V	SIG
Q205	SIG	0V	SIG
Q206	SIG	0V	SIG
Q401	0.06V	0.12V	0.81V
Q402	0.06V	0.12V	0.79V
Q403	0.07V	0.18V	0.8V
Q404	0.08V	0.16V	0.85V
Q405	3.95V	7.73V	4.77V
Q861	12.96V	12.88V	0.09V
Q862	0.01V	0.09V	5.12V
Q863	12.77V	12.67V	0.06V
Q864	0.01V	0.06V	8.98V
Q865	15.69V	9.02V	15.14V

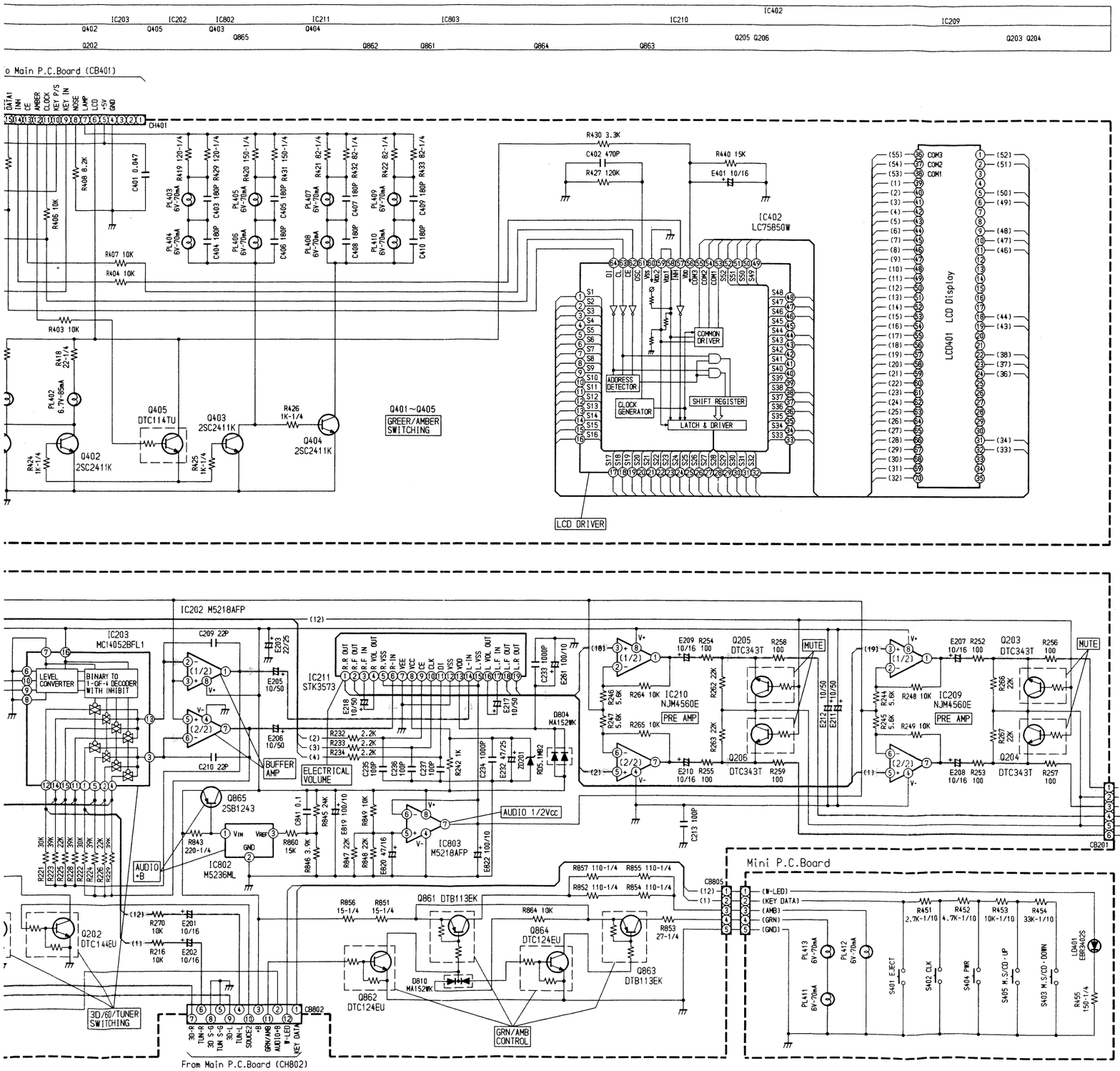
[Measuring Conditions]

1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : CD : Be playing back the 2nd Music of the test CD (YEDS-18)
   Tuner : No signal input
   FM : 98.1MHz
   MW : 999kHz
   LW : 216kHz

Schematic Diagram (2/4)

IC	IC401	IC201 IC212	IC203	IC202	IC802	IC211	IC803	IC402	IC210	IC209
Transistor (Q)	Q401 Q402 Q405 Q403 Q404 Q865 Q201 Q202 Q862 Q861 Q864 Q863 Q205 Q206 Q203 Q204									





NOTES:
1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1{,}000{,}000}$

IC201

1	4.69V
2	4.69V
3	4.69V
4	0V
5	4.69V
6	4.69V
7	4.69V
8	8.96V

IC202

1	4.68V
2	4.68V
3	4.68V
4	0V
5	4.68V
6	4.68V
7	4.68V
8	8.96V

IC203

1	4.68V	9	0V
2	NC	10	8.95V
3	4.69V	11	4.68V
4	4.68V	12	4.67V
5	4.68V	13	4.18V
6	0V	14	4.69V
7	0V	15	NC
8	0V	16	8.96V

IC209

1	4.7V
2	4.7V
3	4.7V
4	0V
5	4.7V
6	4.7V
7	4.7V
8	8.96V

IC210

1	4.7V
2	4.7V
3	4.7V
4	0V
5	4.7V
6	4.7V
7	4.7V
8	8.96V

IC211

1	4.67V	11	0V / 5V
2	4.67V	12	0V
3	4.67V	13	8.29V
4	4.68V	14	SIG
5	4.68V	15	4.68V
6	SIG	16	4.68V
7	0V	17	4.68V
8	5.02V	18	4.68V
9	0V / 5V	19	4.68V
10	0V / 5V		

IC212

1	4.69V
2	4.69V
3	4.69V
4	0V
5	4.69V
6	4.69V
7	4.69V
8	8.96V

IC401

1	0.08V	9	0V / 5V
2	0V / 5.1V	10	0V / 5V
3	0V / 5V	11	0V / 5V
4	NC	12	0V / 5V
5	5.08V	13	5.08V
6	5.08V	14	5.08V
7	NC	15	5.08V
8	0V / 5V	16	5.1V

IC802

1	14.94V
2	0V
3	1.23V

IC803

1	NC
2	NC
3	NC
4	0V
5	4.68V
6	4.68V
7	4.68V
8	8.95V

IC402

1	PS	17	PS	33	PS	49	PS
2	PS	18	PS	34	PS	50	PS
3	PS	19	PS	35	PS	51	PS
4	PS	20	PS	36	PS	52	PS
5	PS	21	PS	37	PS	53	PS
6	PS	22	PS	38	PS	54	PS
7	PS	23	PS	39	NC	55	PS
8	PS	24	PS	40	NC	56	5.1V
9	PS	25	PS	41	NC	57	5.12V
10	PS	26	PS	42	NC	58	PS
11	PS	27	PS	43	PS	59	PS
12	PS	28	PS	44	PS	60	PS
13	PS	29	PS	45	NC	61	PS
14	PS	30	PS	46	PS	62	PS
15	PS	31	PS	47	PS	63	PS
16	PS	32	PS	48	PS	64	PS

	E	C	B
Q201	0V	8.96V	0V
Q202	0V	0V	5.12V
Q203	SIG	0V	SIG
Q204	SIG	0V	SIG
Q205	SIG	0V	SIG
Q206	SIG	0V	SIG
Q401	0.06V	0.12V	0.81V
Q402	0.06V	0.12V	0.79V
Q403	0.07V	0.18V	0.8V
Q404	0.08V	0.16V	0.85V
Q405	3.95V	7.73V	4.77V
Q861	12.96V	12.88V	0.09V
Q862	0.01V	0.09V	5.12V
Q863	12.77V	12.67V	0.06V
Q864	0.01V	0.06V	8.98V
Q865	15.69V	9.02V	15.14V

[Measuring Conditions]

1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : CD : Be playing back the 2nd Music of the test CD (YEDS-18)
   Tuner : No signal input
   FM : 98.1MHz
   MW : 999kHz
   LW : 216kHz

Schematic Diagram (3/4)

IC	IC1102	IC1105	IC1101	IC1106	IC1109	IC1104	IC1103
Transistor (Q,PT)	Q1111 Q1103 Q1104 Q1101 Q1113 Q1112 Q1115 Q1102		Q1114	Q1116			PT1303 Q1201

CD-LSI P.C.Board

Q1111 2SC4081

SUB BEAM CONTROL

HD1101 LASER PICK UP UNIT

CB1102

LASER DIODE CONTROL

Q1103 2SB1132

IC1102 TA8191F FOCUS/TRACKING /SLED/SPINDLE SERVO CONTROL (RF AMP)

Q1101 DTC124EU

FOCUS GAIN SWITCHING

REGULATOR

Q1104 2SA1576

Q1112 DTC124TU

Q1113 DTC124TU

Q1115 DTA124EU

SCRATCH CD DETECTOR

IC1101 TC9236AF SERVO & SIGNAL PROCESSOR

IC1109 TC7SU04F

INVERTER

DISC MOVEMENT DETECTOR

PT1303 PS3062

IC1103 BA4560F I/V CONVERTER

T.P.1

T.P.2

T.P.3

T.P.4

FOCUS COIL

TRACKING COIL

SCRATCH CD DETECTOR

Q1116 DTC124EU

Q1114 DTC124EU

Driver P.C.Board

CB1101

CH1101

CB1103

SLED MOTOR M1102

SPINDLE MOTOR M1101

IC1105 BA6298FP

BTL OUT, LEVEL SHIFT, REGULATOR, DRIVER MUTE, INPUT, N.C, Vcc, VREF, R.CONT, GND

SWITCHING

Q1102 2SB1182TL

S1706 LIMIT SW

LED P.C.Board (1)

LD1701 AN501-B1

RND1702

FOCUS,TRACKING ACTUATE DRIVER/ SLED,SPINDLE MOTOR DRIVER

Q1201 2SC4081

DIGITAL AUDIO +5V

D/A CONVERTER

IC1104 PCM67U

IC1106 SM5840CS

8fs DIGITAL FILTER

SYSTEM CLOCK

INPUT DATA INTERFACE

TIMING CONTROLLER

FILTER OPERATION AND ATTENUATION OPERATION BLOCK

INTERFACE OUTPUT DATA

DE EMPHASIS AND SOFT MUTE CONTROL

INPUT INTERFACE CIRCUIT

1st ORDER NOISE SHAVER

1 BIT DAC

10 BIT DAC

DIGITAL OFFSET CIRCUIT

REFERENCE AND BIAS CIRCUIT

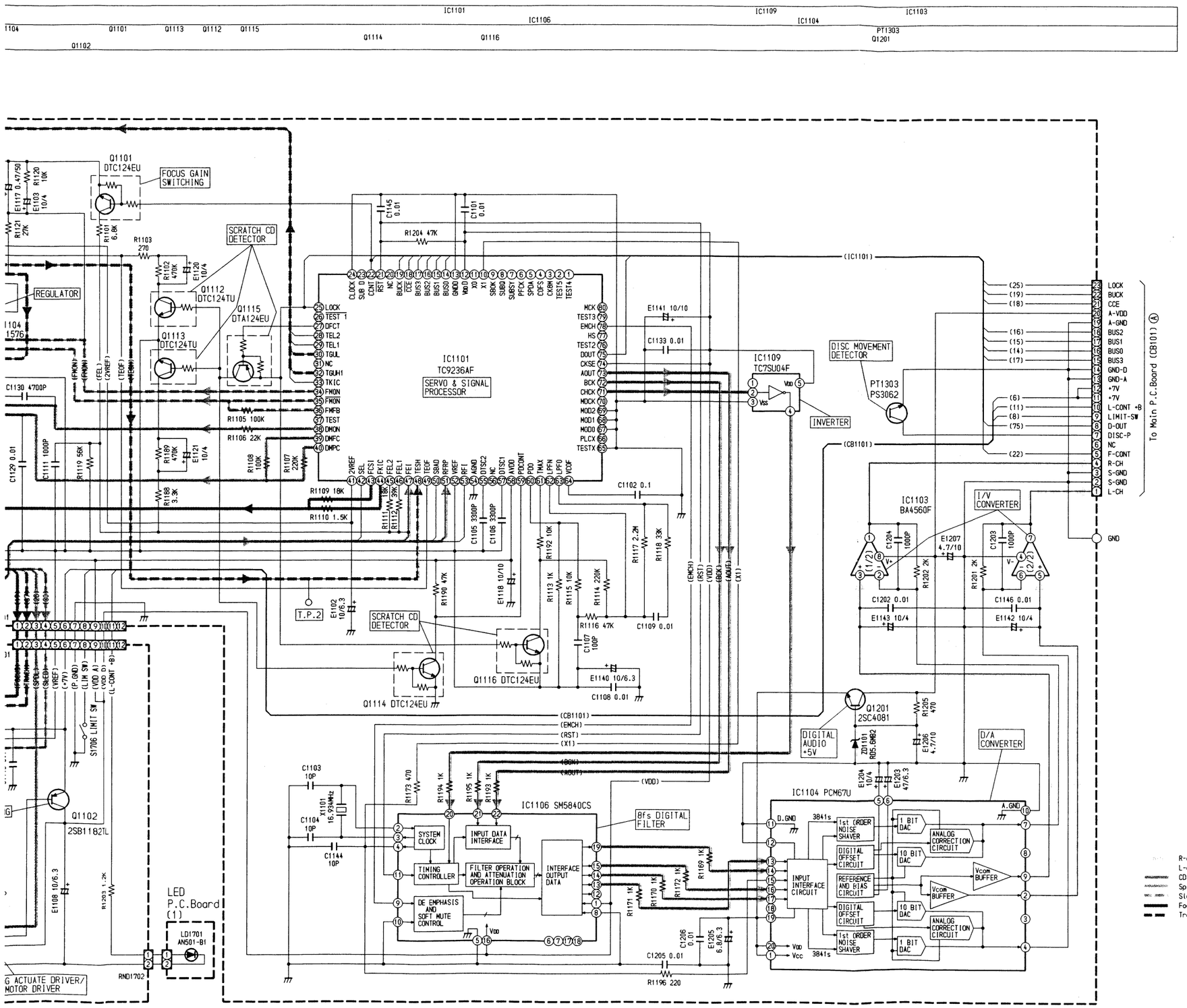
ANALOG CORRECTION CIRCUIT

VCOM BUFFER

X1101 16.934MHz

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$



IC1101

1	5.1V	21	5.12V	41	4.52V	61	2.2V
2	5.1V	22	0.02V	42	5.2V	62	2.2V
3	0.01V	23	0V / 5V	43	2.62V	63	PS
4	0V / 5V	24	0V	44	2.71V	64	2.18V
5	0.1V	25	5.02V	45	2.3V	65	0V
6	0V / 5V	26	5.02V	46	2.2V	66	PS
7	0V / 5V	27	5.1V	47	2.22V	67	0V
8	0V / 5V	28	2.25V	48	2.2V	68	0V
9	5.1V	29	2.25V	49	2.3	69	0V
10	PS	30	2.25V	50	PS	70	0V / 5V
11	PS	31	0V	51	PS	71	0V / 5V
12	5.1V	32	2.26V	52	2.21V	72	PS
13	0V	33	2.2V	53	PS	73	PS
14	0V / 5V	34	2.23V	54	0.01V	74	5.1V
15	0V / 5V	35	2.24V	55	PS	75	0.02V
16	0V / 5V	36	2.2V	56	0V / 5V	76	5.08V
17	0V / 5V	37	5.1V	57	PS	77	5.1V
18	0V / 5V	38	2.25V	58	5.1V	78	0.02V
19	0V / 5V	39	2.28V	59	5.03V	79	PS
20	PS	40	PS	60	PS	80	PS

IC1102

1	1.98V	12	PS	23	5.02V	34	4.52V
2	2.2V	13	3.85V	24	2.25V	35	4.4V
3	2.22V	14	2.21V	25	2.25V	36	2.22V
4	2.25V	15	2.21V	26	PS	37	PS
5	2.24V	16	5.02V	27	PS	38	2.22V
6	4.05V	17	0V	28	2.25V	39	2.22V
7	0.35V	18	2.21V	29	2.22V	40	PS
8	2.25V	19	PS	30	2.22V	41	PS
9	PS	20	PS	31	2.22V	42	PS
10	PS	21	2.62V	32	2.22V	43	PS
11	2.22V	22	0.02V	33	PS	44	2.22V

IC1103

1	4.7V
2	3.5V
3	3.5V
4	0V
5	3.5V
6	3.5V
7	4.7V
8	15.49V

IC1104

1	5.1V	11	0V
2	3.5V	12	0V
3	0V	13	PS
4	3.5V	14	PS
5	3.2V	15	PS
6	4.1V	16	PS
7	3.5V	17	PS
8	0V	18	5.1V
9	3.5V	19	5.1V
10	0V	20	5.1V

IC1109

1	NC
2	5V
3	0V
4	5.12V
5	5.12V

IC1105

1	3.8V	15	2.3V
2	3.8V	16	2.22V
3	2.45V	17	4V
4	2.32V	18	3.8V
5	8V	19	2.22V
6	6V	20	NC
7	7.2V	21	7.2V
8	0.02V	22	7.2V
9	2.4V	23	2.22V
10	PS	24	NC
11	PS	25	PS
12	PS	26	4V
13	0.02V	27	4.1V
14	2.3V	28	0.02V

IC1106

1	5.02V	12	0V / 5V
2	PS	13	0V / 5V
3	PS	14	0V / 5V
4	PS	15	0V / 5V
5	0V	16	5.1V
6	0V	17	0V
7	0V	18	0V
8	0V	19	PS
9	0V	20	PS
10	0V	21	PS
11	5.11V	22	PS

	E	C	B
Q1101	2.22V	2.22V	0.11V
Q1102	7.1V	6V	8V
Q1103	4.67V	1.89V	4.03V
Q1104	5.11V	4.33V	4.52V
Q1111	1.23V	1.26V	1.87V
Q1112	0.11V	2.17V	2.21V
Q1113	2.22V	2.17V	0.11V
Q1114	0.11V	5.09V	0.11V
Q1115	5.07V	0.11V	5.05V
Q1116	2.22V	2.23V	5.08V
Q1201	5.13V	15.47V	5.72V

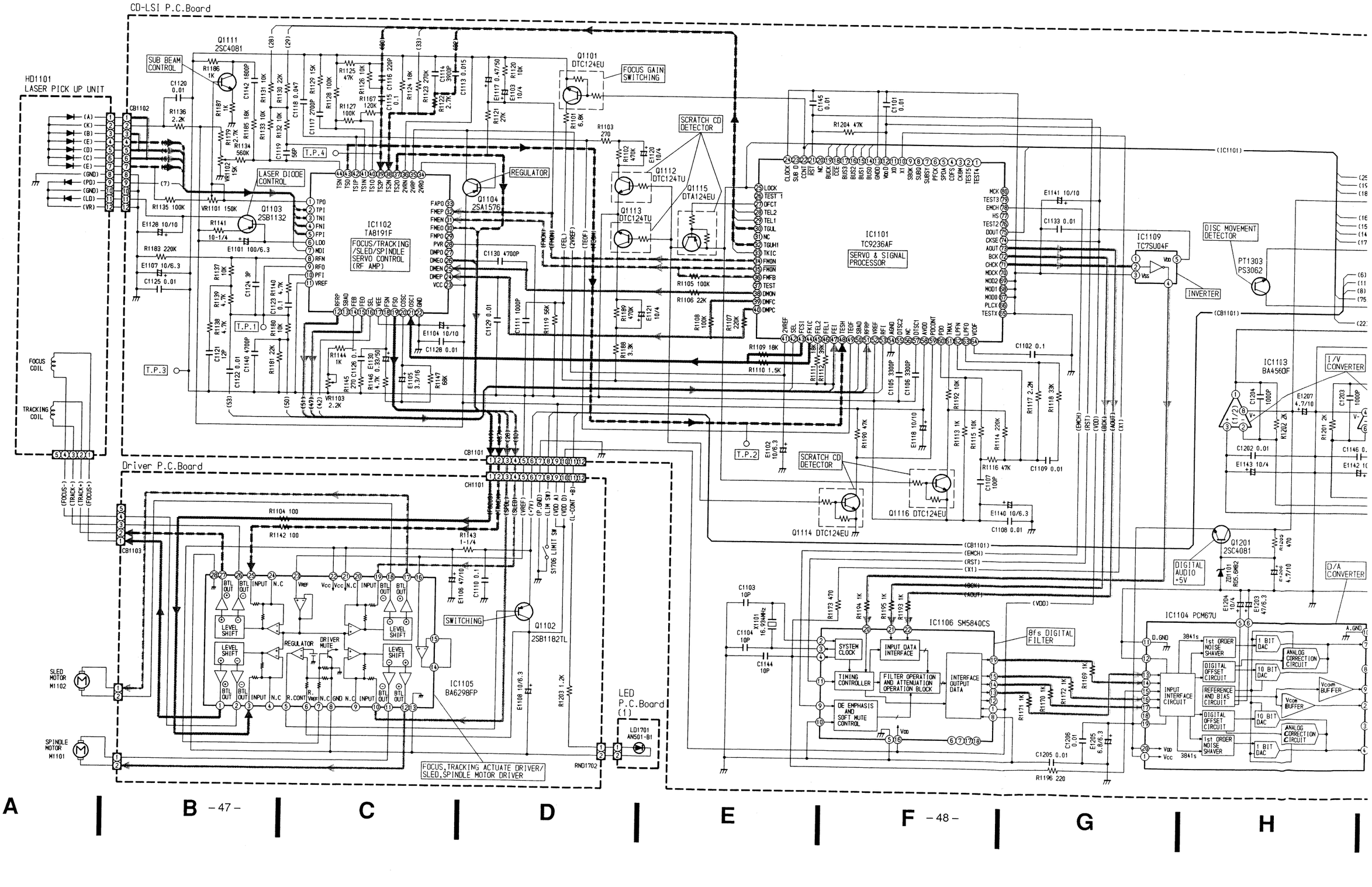
R-ch Signal Line
L-ch Signal Line
CD Signal Line (Digital)
Spindle Servo Signal Line
Sled Servo Signal Line
Focus Servo Signal Line
Tracking Servo Signal Line

[Measuring Conditions]

1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : CD : Be playing back the 2nd Music of the test CD (YEDS-18)
   Tuner : No signal input
   FM : 98.1MHz
   MW : 999kHz
   LW : 216kHz

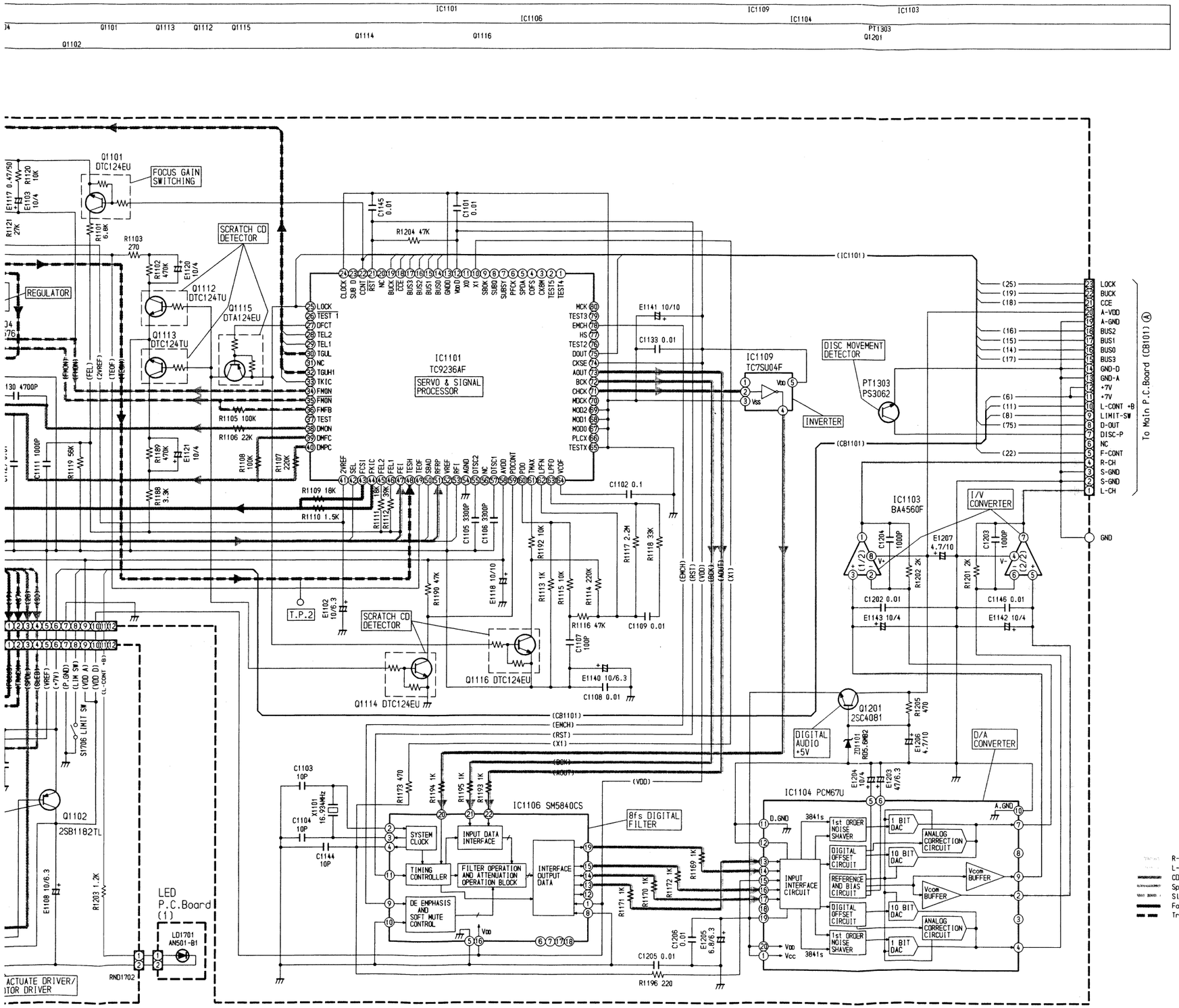
Schematic Diagram (3/4)

IC	IC1102	IC1105	IC1101	IC1109	IC1103
Transistor (Q,PT)	Q1111 Q1103 Q1104 Q1101 Q1113 Q1112 Q1115 Q1102 Q1114 Q1116 IC1106 IC1104 PT1303 Q1201				



NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1{,}000{,}000}$



IC1101

1	5.1V	21	5.12V	41	4.52V	61	2.2V
2	5.1V	22	0.02V	42	5.2V	62	2.2V
3	0.01V	23	0V / 5V	43	2.62V	63	PS
4	0V / 5V	24	0V	44	2.71V	64	2.18V
5	0.1V	25	5.02V	45	2.3V	65	0V
6	0V / 5V	26	5.02V	46	2.2V	66	PS
7	0V / 5V	27	5.1V	47	2.22V	67	0V
8	0V / 5V	28	2.25V	48	2.2V	68	0V
9	5.1V	29	2.25V	49	2.3	69	0V
10	PS	30	2.25V	50	PS	70	0V / 5V
11	PS	31	0V	51	PS	71	0V / 5V
12	5.1V	32	2.26V	52	2.21V	72	PS
13	0V	33	2.2V	53	PS	73	PS
14	0V / 5V	34	2.23V	54	0.01V	74	5.1V
15	0V / 5V	35	2.24V	55	PS	75	0.02V
16	0V / 5V	36	2.2V	56	0V / 5V	76	5.08V
17	0V / 5V	37	5.1V	57	PS	77	5.1V
18	0V / 5V	38	2.25V	58	5.1V	78	0.02V
19	0V / 5V	39	2.28V	59	5.03V	79	PS
20	PS	40	PS	60	PS	80	PS

IC1102

1	1.98V	12	PS	23	5.02V	34	4.52V
2	2.2V	13	3.85V	24	2.25V	35	4.4V
3	2.22V	14	2.21V	25	2.25V	36	2.22V
4	2.25V	15	2.21V	26	PS	37	PS
5	2.24V	16	5.02V	27	PS	38	2.22V
6	4.05V	17	0V	28	2.25V	39	2.22V
7	0.35V	18	2.21V	29	2.22V	40	PS
8	2.25V	19	PS	30	2.22V	41	PS
9	PS	20	PS	31	2.22V	42	PS
10	PS	21	2.62V	32	2.22V	43	PS
11	2.22V	22	0.02V	33	PS	44	2.22V

IC1103

1	4.7V
2	3.5V
3	3.5V
4	0V
5	3.5V
6	3.5V
7	4.7V
8	15.49V

IC1104

1	5.1V	11	0V
2	3.5V	12	0V
3	0V	13	PS
4	3.5V	14	PS
5	3.2V	15	PS
6	4.1V	16	PS
7	3.5V	17	PS
8	0V	18	5.1V
9	3.5V	19	5.1V
10	0V	20	5.1V

IC1109

1	NC
2	5V
3	0V
4	5.12V
5	5.12V

IC1105

1	3.8V	15	2.3V
2	3.8V	16	2.22V
3	2.45V	17	4V
4	2.32V	18	3.8V
5	8V	19	2.22V
6	6V	20	NC
7	7.2V	21	7.2V
8	0.02V	22	7.2V
9	2.4V	23	2.22V
10	PS	24	NC
11	PS	25	PS
12	PS	26	4V
13	0.02V	27	4.1V
14	2.3V	28	0.02V

IC1106

1	5.02V	12	0V / 5V
2	PS	13	0V / 5V
3	PS	14	0V / 5V
4	PS	15	0V / 5V
5	0V	16	5.1V
6	0V	17	0V
7	0V	18	0V
8	0V	19	PS
9	0V	20	PS
10	0V	21	PS
11	5.11V	22	PS

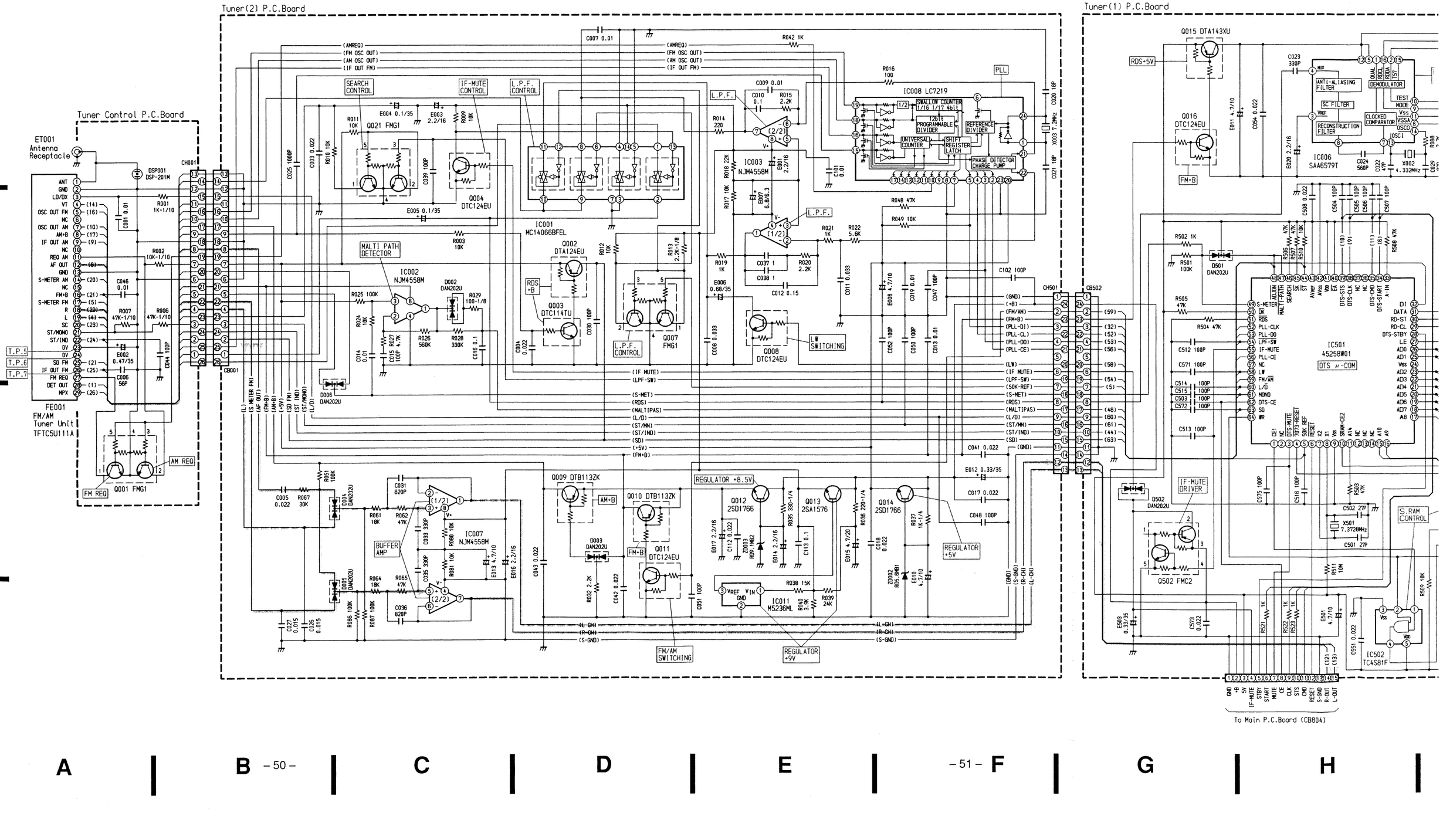
	E	C	B
Q1101	2.22V	2.22V	0.11V
Q1102	7.1V	6V	8V
Q1103	4.67V	1.89V	4.03V
Q1104	5.11V	4.33V	4.52V
Q1111	1.23V	1.26V	1.87V
Q1112	0.11V	2.17V	2.21V
Q1113	2.22V	2.17V	0.11V
Q1114	0.11V	5.09V	0.11V
Q1115	5.07V	0.11V	5.05V
Q1116	2.22V	2.23V	5.08V
Q1201	5.13V	15.47V	5.72V

[Measuring Conditions]

1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : CD : Be playing back the 2nd Music of the test CD (YEDS-18)
   Tuner : No signal input
   FM : 98.1MHz
   MW : 999kHz
   LW : 216kHz

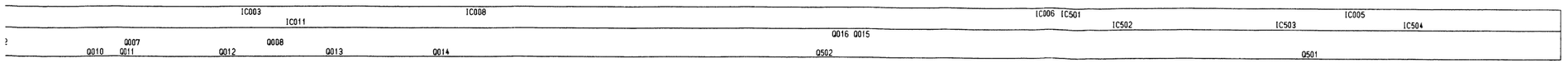
Schematic Diagram (4/4)

IC	IC002	IC007	IC001	IC003	IC011	IC008	IC006 IC501	IC502
Transistor (Q)	Q021	Q004	Q003 Q002 Q009	Q010	Q007 Q011	Q012	Q008 Q013	Q014	Q016 Q015 Q502	Q001

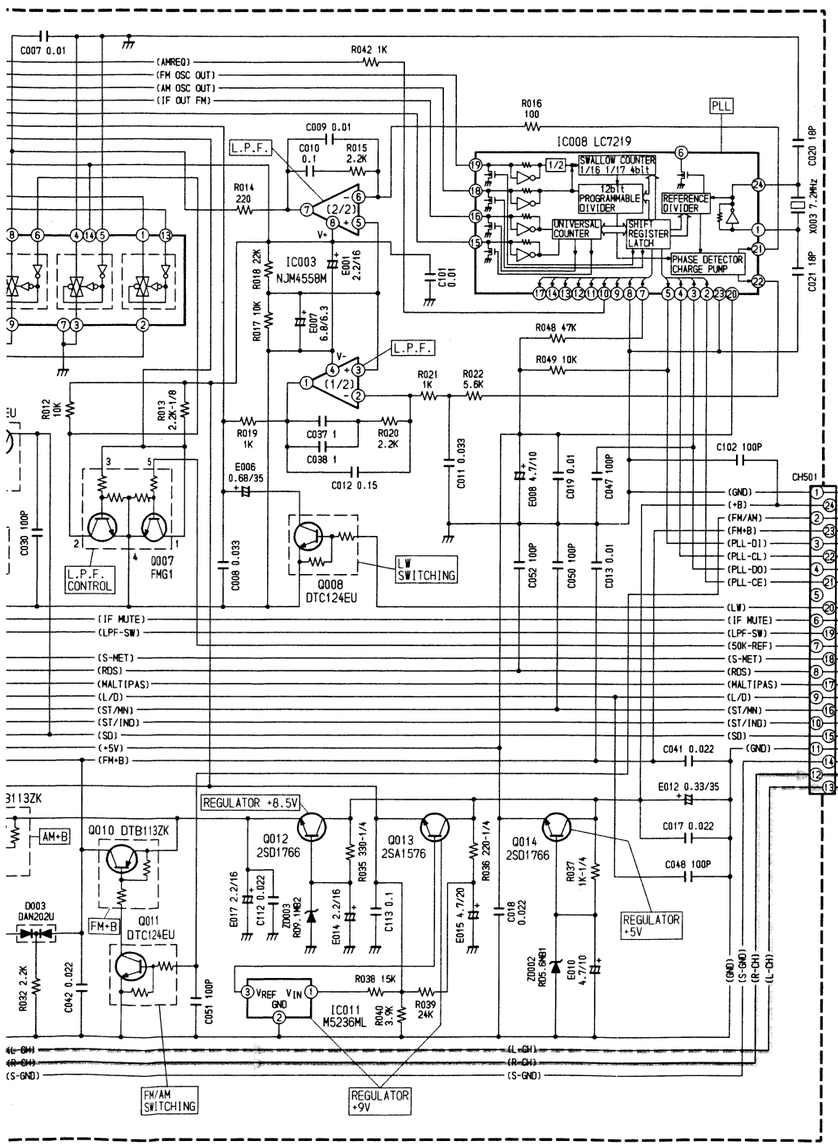


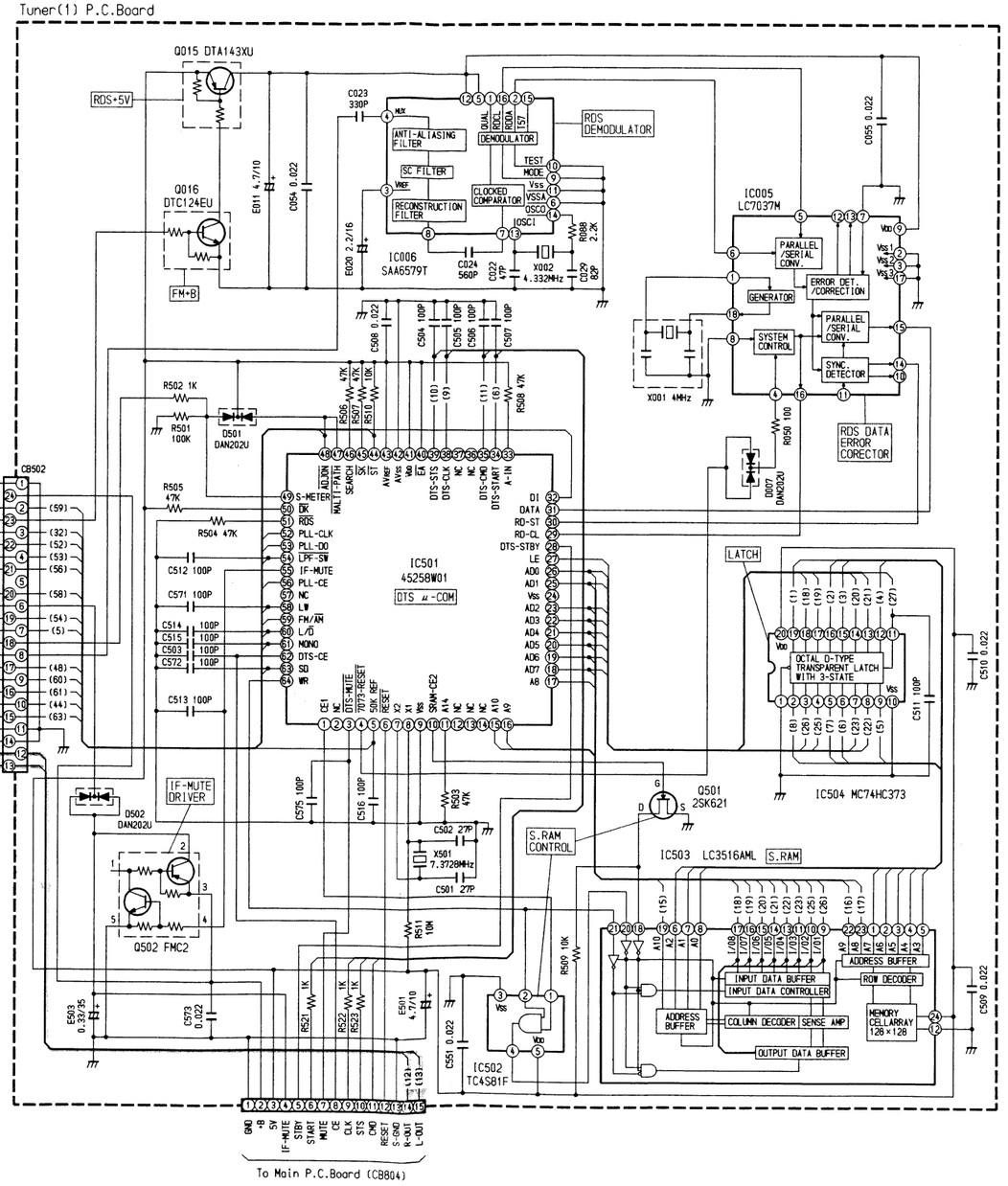
NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. $P = \frac{1}{1{,}000{,}000}$



Tuner(1) P.C.Board





IC001

1	2.5V	8	7.2V
2	2.5V	9	5V
3	3.2V	10	5V
4	3.2V	11	5V
5	8.8V	12	8.2V
6	0V	13	8.8V
7	0V	14	8.8V

IC002

1	PS
2	5V
3	5V
4	0V
5	NC
6	NC
7	NC
8	8.8V

IC003

1	5V
2	2.8V
3	2.8V
4	0V
5	2.8V
6	2.8V
7	6V
8	8.8V

IC005

1	PS	10	NC
2	0V	11	NC
3	0V	12	NC
4	4.8V	13	NC
5	PS	14	5V
6	PS	15	5V
7	0V	16	5V
8	0V	17	0V
9	5V	18	PS

IC006

1	NC	9	0V
2	PS	10	0V
3	2.5V	11	0V
4	2.5V	12	5V
5	5V	13	PS
6	0V	14	PS
7	2.5V	15	NC
8	2.5V	16	PS

IC007

1	SIG
2	3.2V
3	3.2V
4	0V
5	3.2V
6	3.2V
7	SIG
8	8.8V

IC008

1	PS	13	NC
2	0V	14	NC
3	0V	15	0V
4	0V	16	0V
5	5V	17	NC
6	NC	18	0V
7	5V	19	PS
8	0V	20	5V
9	NC	21	2.8V
10	4.8V	22	2.8V
11	NC	23	0V
12	NC	24	PS

IC011

1	1.5V
2	0V
3	1.4V

IC502

1	PS
2	5V
3	0V
4	PS
5	5V

IC501

1	PS	17	PS	33	5V	49	0V
2	NC	18	PS	34	PS	50	5V
3	5V	19	PS	35	0V	51	0V
4	5V	20	PS	36	NC	52	0V
5	0V	21	PS	37	NC	53	0V
6	5V	22	PS	38	PS	54	5V
7	PS	23	PS	39	PS	55	0V
8	PS	24	0V	40	5V	56	0V
9	0V	25	PS	41	5V	57	NC
10	5V	26	0V	42	0V	58	0V
11	PS	27	PS	43	5V	59	5V
12	NC	28	0V	44	5V	60	0V
13	NC	29	5V	45	5V	61	0V
14	NC	30	5V	46	5V	62	5V
15	0V	31	5V	47	2V	63	0V
16	PS	32	5V	48	2V	64	5V

IC503

1	0V	13	PS	
2	PS	14	PS	
3	PS	15	PS	
4	PS	16	PS	
5	PS	17	PS	
6	PS	18	0V	
7	PS	19	PS	
8	0V	20	PS	
9	0V	21	5V	
10	0V	22	PS	
11	PS	23	PS	
12	0V	24	5V	

IC504

1	0V	11	PS
2	0V	12	PS
3	0V	13	PS
4	0V	14	PS
5	PS	15	PS
6	PS	16	PS
7	PS	17	PS
8	PS	18	PS
9	PS	19	PS
10	0V	20	5V

	1	2	3	4	5
Q001	0.1V	0.06V	4.69V	0V	4.69V
Q007	8V	0V	0V	0V	0V
Q021	9V	0V	5V	0V	0V
Q502	13.5V	0V	13.5V	0V	0V

	E	C	B
Q002	5V	0V	5V
Q003	0V	5V	0V
Q004	0V	9V	0V
Q008	0V	0V	0V
Q009	9V	0.8V	8.5V
Q010	9V	9V	0V
Q011	0V	0V	5V
Q012	9V	13.5V	9.5V
Q013	13.5V	9V	12.5V
Q014	5V	13.5V	5.4V
Q015	5V	5V	0V
Q016	0V	0V	13.5V
Q501	5V	0V	0V

[Measuring Conditions]

1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : CD : Be playing back the 2nd Music of the test CD (YEDS-18)
   Tuner : No signal input
   FM : 98.1MHz
   MW : 999kHz
   LW : 216kHz

Schematic Diagram (4/4)

IC	IC002 IC007 IC001 IC003 IC011 IC008 IC006 IC501 IC502
Transistor (Q)	Q021 Q004 Q003 Q002 Q009 Q007 Q011 Q008 Q016 Q015 Q001 Q010 Q012 Q013 Q014 Q502

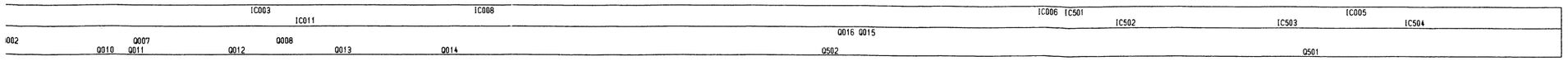
Tuner(2) P.C.Board

Tuner Control P.C.Board

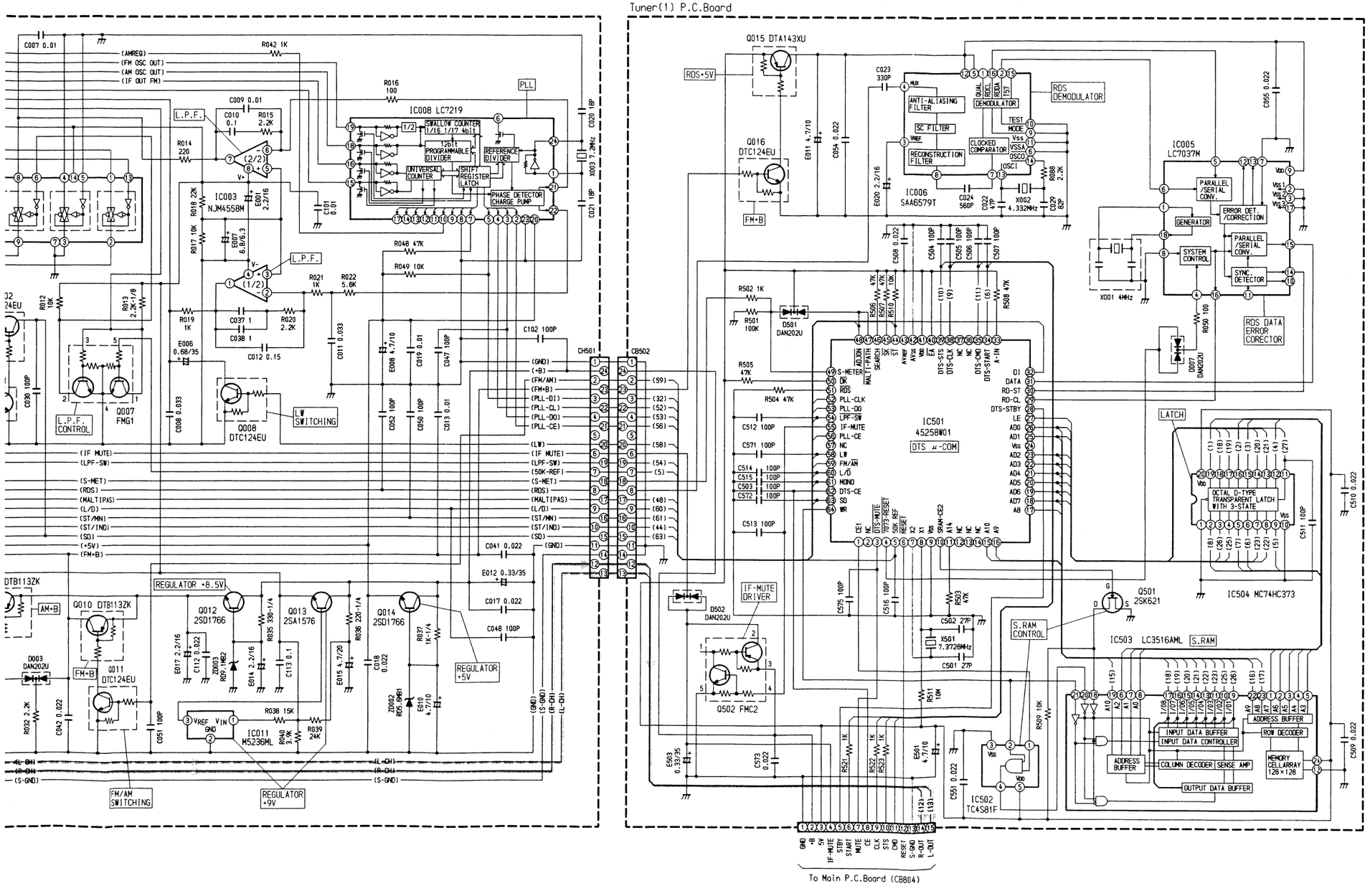
Tuner(1) P.C.Board

NOTES:

1. All resistance values are in ohms. K = 1,000
2. All capacitance values are in microfarads. P = $\frac{1}{1{,}000{,}000}$



Tuner(1) P.C.Board



IC001			
1	2.5V	8	7.2V
2	2.5V	9	5V
3	3.2V	10	5V
4	3.2V	11	5V
5	8.8V	12	8.2V
6	0V	13	8.8V
7	0V	14	8.8V

IC002	
1	PS
2	5V
3	5V
4	0V
5	NC
6	NC
7	NC
8	8.8V

IC003	
1	5V
2	2.8V
3	2.8V
4	0V
5	2.8V
6	2.8V
7	6V
8	8.8V

IC005			
1	PS	10	NC
2	0V	11	NC
3	0V	12	NC
4	4.8V	13	NC
5	PS	14	5V
6	PS	15	5V
7	0V	16	5V
8	0V	17	0V
9	5V	18	PS

IC006			
1	NC	9	0V
2	PS	10	0V
3	2.5V	11	0V
4	2.5V	12	5V
5	5V	13	PS
6	0V	14	PS
7	2.5V	15	NC
8	2.5V	16	PS

IC007	
1	SIG
2	3.2V
3	3.2V
4	0V
5	3.2V
6	3.2V
7	SIG
8	8.8V

IC008			
1	PS	13	NC
2	0V	14	NC
3	0V	15	0V
4	0V	16	0V
5	5V	17	NC
6	NC	18	0V
7	5V	19	PS
8	0V	20	5V
9	NC	21	2.8V
10	4.8V	22	2.8V
11	NC	23	0V
12	NC	24	PS

IC011	
1	1.5V
2	0V
3	1.4V

IC502	
1	PS
2	5V
3	0V
4	PS
5	5V

IC501							
1	PS	17	PS	33	5V	49	0V
2	NC	18	PS	34	PS	50	5V
3	5V	19	PS	35	0V	51	0V
4	5V	20	PS	36	NC	52	0V
5	0V	21	PS	37	NC	53	0V
6	5V	22	PS	38	PS	54	5V
7	PS	23	PS	39	PS	55	0V
8	PS	24	0V	40	5V	56	0V
9	0V	25	PS	41	5V	57	NC
10	5V	26	0V	42	0V	58	0V
11	PS	27	PS	43	5V	59	5V
12	NC	28	0V	44	5V	60	0V
13	NC	29	5V	45	5V	61	0V
14	NC	30	5V	46	5V	62	5V
15	0V	31	5V	47	2V	63	0V
16	PS	32	5V	48	2V	64	5V

IC503			
1	0V	13	PS
2	PS	14	PS
3	PS	15	PS
4	PS	16	PS
5	PS	17	PS
6	PS	18	0V
7	PS	19	PS
8	0V	20	PS
9	0V	21	5V
10	0V	22	PS
11	PS	23	PS
12	0V	24	5V

IC504			
1	0V	11	PS
2	0V	12	PS
3	0V	13	PS
4	0V	14	PS
5	PS	15	PS
6	PS	16	PS
7	PS	17	PS
8	PS	18	PS
9	PS	19	PS
10	0V	20	5V

	1	2	3	4	5
Q001	0.1V	0.06V	4.69V	0V	4.69V
Q007	8V	0V	0V	0V	0V
Q021	9V	0V	5V	0V	0V
Q502	13.5V	0V	13.5V	0V	0V

	E	C	B
Q002	5V	0V	5V
Q003	0V	5V	0V
Q004	0V	9V	0V
Q008	0V	0V	0V
Q009	9V	0.8V	8.5V
Q010	9V	9V	0V
Q011	0V	0V	5V
Q012	9V	13.5V	9.5V
Q013	13.5V	9V	12.5V
Q014	5V	13.5V	5.4V
Q015	5V	5V	0V
Q016	0V	0V	13.5V
Q501	5V	0V	0V

[Measuring Conditions]

1. Power Supply Voltage : DC14V
2. Measuring Meter : Digital Multi Voltmeter
3. Measuring Point Reference : Between Ground
4. Measuring Condition : CD : Be playing back the 2nd Music of the test CD (YEDS-18)
   Tuner : No signal input
   FM : 98.1MHz
   MW : 999kHz
   LW : 216kHz

Electrical Parts List

Resistor : Carbon resistors under 1 / 4 watts are not mentioned in the parts list, please confirm them by schematic diagram.

Capacitor : μF = microfarads, pF = picofarads

Abbreviations

RES.=	Resistor	CAP.=	Capacitor
C.F.=	Carbon Film	ELY.=	Electrolytic
M.F.=	Metal Film	CER.=	Ceramic
M.O.=	Metal Oxide Film	MYL.=	Mylar
M.P.=	Metal Plate	TAN.=	Tantalum
TR.=	Transistor	POLY.=	Polystyrol
TRANS.=	Transformer	PP.=	Polypropylene
CP.=	Chip	PLT.=	Polyethylene
		PF.=	Polyester Film

Main P. C. Board

Symbol No.	Part No.	Description
IC's		
IC601	51T65104W03	65104W03
IC602	51T95014F13	S-8052HNM-CR
IC603	51T45522W02	X24LC01SI
IC701	51T45571W02	LB1836M
IC702	51T55288W02	LB1638M
IC801	51T95014F09	S-8054ALR-LN
Transistors		
Q601	48T94606F03	CP., DTC124EU
Q602	48T94606F53	CP., DTA124EU
Q603	48T94606F03	CP., DTC124EU
Q604	48T73888F12	CP., FMC2
Q605	48T73888F12	CP., FMC2
Q701	48T93828F01	2SD1994A
Q702	48T73888F12	CP., FMC2
Q801	48T94606F03	CP., DTC124EU
Q802	48T94606F56	CP., DTA114EU
Q803	48T94582F01	CP., 2SC4081
Q804	48T94606F67	CP., DTA123YU
Q805	48T84366F05	2SB1243
Q806	48T94606F08	CP., DTC143EU
Q807	48T15289W04	2SD2008
Q809	48T73888F12	CP., FMC2
Q811	48T94581F01	CP., 2SA1576
Q812	48T94606F03	CP., DTC124EU
Q813	48T84366F05	2SB1243
Q814	48T94606F03	CP., DTC124EU
Q815	48T84366F05	2SB1243
Q816	48T94606F03	CP., DTC124EU
Q817	48T16335W01	CP., IMH11
Q819	48T93828F01	2SD1994A
Q820	48T73888F12	CP., FMC2
Q821	48T84366F05	2SB1243
Q822	48T94606F03	CP., DTC124EU
Q823	48T35145W03	2SD2038
Q824	48T93828F01	2SD1994A
Q825	48T63417F01	CP., 2SC2412K
Diodes		
D101	48T94608F03	CP., DAN202U
D601	48T94608F03	CP., DAN202U
D602	48T94608F03	CP., DAN202U
D701	48T84052F11	11ES2
D702	48T84052F11	11ES2
D801	48T81044F01	10E2
D802	48T94608F03	CP., DAN202U
D803	48T94608F03	CP., DAN202U
D806	48T94608F01	CP., DA204U
D807	48T84052F11	11ES2
D808	48T94608F03	CP., DAN202U
D809	48T94608F03	CP., DAN202U
ZD701	48T25766W08	Zener, HZS6C2L
ZD801	48T25766W04	Zener, HZS6B1L
ZD802	48T25766W04	Zener, HZS6B1L
ZD805	48T25766W20	Zener, HZS9A2L
ZD806	48T25766W01	Zener, HZS6A1L
ZD807	48T25766W17	Zener, HZS7C2L
Switch		
S601	40T16096W03	Tact, SKHHLW (RESET)
Photo Transistors		
PT701	48T35506W03	PS3062
PT702	48T35506W03	PS3062
Crystals		
X601	91T25806W42	7.15909MHz
X602	91T15849W02	32.768KHz

Symbol No.	Part No.	Description
Thermistor		
TH601	48T93439F06	100K ohm
Capacitors		
C050	08S65128F35	CP., 100pF
C201	08S65128F67	CP., 6800pF
C202	08S65128F67	CP., 6800pF
C601	08S65128F49	CP., 390pF
E601	23T25191W05	ELY., 10μF / 6.3V
C602	08S65128F15	CP., 15pF
C603	08S65128F15	CP., 15pF
C604	08S65128F18	CP., 20pF
C605	08S65128F18	CP., 20pF
C606	08S65128F35	CP., 100pF
C607	08S65128F35	CP., 100pF
C608	08S65128F35	CP., 100pF
C609	08S65128F35	CP., 100pF
C610	08S65128F57	CP., 1000pF
C611	08S65128F35	CP., 100pF
C612	08S65128F35	CP., 100pF
C613	08S65128F35	CP., 100pF
C614	08S65128F69	CP., 0.01μF
C615	08S65128F35	CP., 100pF
C616	08S65128F35	CP., 100pF
C617	08S65128F35	CP., 100pF
C618	08S65128F35	CP., 100pF
C701	08S65128F69	CP., 0.01μF
E701	23S55311W42	CP., TAN. 4.7μF / 20V
C702	08S65128F69	CP., 0.01μF
C703	08S65128F35	CP., 100pF
C704	08S65128F35	CP., 100pF
C801	08S65128F69	CP., 0.01μF
E801	23T00149L29	ELY., 1000μF / 16V
C802	08S65128F69	CP., 0.01μF
E802	23T25191W38	ELY., 4.7μF / 10V
C803	08S65128F69	CP., 0.01μF
E803	23T25191W30	ELY., 1μF / 50V
C804	08S65128F69	CP., 0.01μF
E804	23T90882F18	ELY., 470μF / 10V
C805	08S65128F69	CP., 0.01μF
E805	23S61523F12	ELY., 10μF / 16V
C806	08S65128F69	CP., 0.01μF
E806	23T25191W05	ELY., 10μF / 6.3V
C807	08T55390W30	TF, 0.12μF
E807	23T25191W30	ELY., 1μF / 50V

Symbol No.	Part No.	Description
C809	08S65128F69	CP., 0.01μF
E809	23T25191W28	ELY., 0.47μF / 50V
C810	08S65128F69	CP., 0.01μF
C811	08S65128F69	CP., 0.01μF
C812	08S65128F69	CP., 0.01μF
E812	23S61523F12	ELY., 10μF / 16V
C813	08S65128F69	CP., 0.01μF
E813	23T90882F18	ELY., 470μF / 10V
C814	08S65128F19	CP., 22pF
E814	23S55311W23	CP., TAN. 10μF / 10V
C815	08S65128F35	CP., 100pF
C816	08S65128F35	CP., 100pF
C817	08S65128F69	CP., 0.01μF
C818	08S65128F69	CP., 0.01μF
Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)		
R201	06S64995F21	47 ohm
R202	06S64995F21	47 ohm
R601	06S64995F85	22K ohm
R602	06S64996F26	1M ohm
R603	06S64995F85	22K ohm
R605	06S64995F69	4.7K ohm
R606	06S64995F93	47K ohm
R607	06T45591W03	CP., Block 100K ohm
R608	06T45591W02	CP., Block 47K ohm
R609	06T45591W03	CP., Block 100K ohm
R610	06T45591W03	CP., Block 100K ohm
R611	06T45591W03	CP., Block 100K ohm
R612	06T45591W03	CP., Block 100K ohm
R613	06T45591W03	CP., Block 100K ohm
R614	06T45591W03	CP., Block 100K ohm
R615	06T45591W03	CP., Block 100K ohm
R616	06S64995F61	2.2K ohm
R618	06S64995F77	10K ohm
R619	06S64995F77	10K ohm
R620	06S64995F77	10K ohm
R621	06S64995F77	10K ohm
R622	06S64995F77	10K ohm
R623	06S64995F77	10K ohm
R624	06S64995F77	10K ohm
R625	06S64995F61	2.2K ohm
R626	06T45591W03	CP., Block 100K ohm
R627	06S64996F02	100K ohm
R628	06S64996F02	100K ohm
R640	06S70072F37	220 ohm 1/4W
R641	06S64995F77	10K ohm
R643	06T45591W04	CP., Block 10K ohm
R644	06S64996F02	100K ohm

Symbol No.	Part No.	Description
R645	06S64995F93	47K ohm
R646	06S64995F77	10K ohm
R647	06S64995F77	10K ohm
R652	06S64995F69	4.7K ohm
R653	06S64996F02	100K ohm
R654	06S64996F02	100K ohm
R680	06S64995F77	10K ohm
R681	06S64995F77	10K ohm
R683	06S64995F89	33K ohm
R684	06S64995F61	2.2K ohm
R690	06S64995F77	10K ohm
R691	06S64995F77	10K ohm
R701	06S64995F49	680 ohm
R705	06S64995F37	220 ohm
R707	06S70072F41	330 ohm 1/4W
R802	06S64996F02	100K ohm
R803	06S64995F77	10K ohm
R804	06S64995F93	47K ohm
R805	06S70072F65	3.3K ohm 1/4W
R813	06S70072F61	2.2K ohm 1/4W
R814	06S70072F61	2.2K ohm 1/4W
R815	06S64995F77	10K ohm
R819	06S64995F77	10K ohm
R820	06S70072F03	6.8 ohm 1/4W
R821	06S70072F03	6.8 ohm 1/4W
R822	06S70072F03	6.8 ohm 1/4W
R823	06S64995F77	10K ohm
R824	06S53330F61	2.2K ohm 1/8W
R825	06S64995F77	10K ohm
R826	06S64995F77	10K ohm
R827	06S70072F61	2.2K ohm 1/4W
R828	06S64995F77	10K ohm
R829	06S70072F61	2.2K ohm 1/4W
R830	06S70072F77	10K ohm 1/4W
R831	06S64995F77	10K ohm
R832	06S64995F53	1K ohm
R834	06S64995F53	1K ohm
R835	06S70072F09	15 ohm 1/4W
R837	06S70072F41	330 ohm 1/4W
R839	06S64995F77	10K ohm
R840	06S64995F77	10K ohm
R841	06S64995F77	10K ohm
R842	06S70072F41	330 ohm 1/4W
R844	06S70072F45	470 ohm 1/4W
R871	06S64995F55	1.2K ohm

Symbol No.	Part No.	Description
Side P. C. Board		
IC's		
IC201	51T93338F01	NJM4560E
IC202	51T90149F03	M5218AFP
IC203	51T15630W03	MC14052BFL1
IC209	51T93338F01	NJM4560E
IC210	51T93338F01	NJM4560E
IC211	51T55572W01	STK3573
IC212	51T93338F01	NJM4560E
IC802	51T90890F01	M5236ML
IC803	51T90149F03	M5218AFP
Transistors		
Q201	48T94606F01	CP., DTC144EU
Q202	48T94606F01	CP., DTC144EU
Q203	48T62967F33	CP., DTC343T
Q204	48T62967F33	CP., DTC343T
Q205	48T62967F33	CP., DTC343T
Q206	48T62967F33	CP., DTC343T
Q861	48T94875F05	CP., DTB113EK
Q862	48T94606F03	CP., DTC124EU
Q863	48T94875F05	CP., DTB113EK
Q864	48T94606F03	CP., DTC124EU
Q865	48T84366F05	2SB1243
Diodes		
D804	48T25651W02	CP., MA152WK
D810	48T25651W02	CP., MA152WK
ZD201	48T62934F19	CP., Zener RD5.1MB2
Capacitors		
E201	23T55405W01	ELY., 10μF / 16V
E202	23T55405W01	ELY., 10μF / 16V
E203	23T45102W12	ELY., 22μF / 25V
E204	23T55402W15	ELY., 10μF / 16V
C205	08S65128F12	CP., 10pF
E205	23T45102W25	ELY., 10μF / 50V
C206	08S65128F12	CP., 10pF
E206	23T45102W25	ELY., 10μF / 50V
C207	08S65128F12	CP., 10pF
E207	23T55402W15	ELY., 10μF / 16V

Symbol No.	Part No.	Description
C208	08S65128F12	CP., 10pF
E208	23T55402W15	ELY., 10μF / 16V
C209	08S65128F19	CP., 22pF
E209	23T55402W15	ELY., 10μF / 16V
C210	08S65128F19	CP., 22pF
E210	23T55402W15	ELY., 10μF / 16V
C211	08S65128F72	CP., 0.022μF
E211	23T45102W25	ELY., 10μF / 50V
C212	08S65128F69	CP., 0.01μF
E212	23T45102W25	ELY., 10μF / 50V
C213	08S65128F35	CP., 100pF
E213	23T55402W15	ELY., 10μF / 16V
C214	08S65128F35	CP., 100pF
E214	23T55402W15	ELY., 10μF / 16V
C215	08S65128F49	CP., 390pF
E215	23T55402W15	ELY., 10μF / 16V
E216	23T55402W15	ELY., 10μF / 16V
E217	23T45102W25	ELY., 10μF / 50V
E218	23T45102W25	ELY., 10μF / 50V
E220	23T45102W12	ELY., 22μF / 25V
E221	23T55402W15	ELY., 10μF / 16V
E222	23T55402W15	ELY., 10μF / 16V
E223	23T55402W15	ELY., 10μF / 16V
E224	23T55402W15	ELY., 10μF / 16V
E232	23T45102W13	ELY., 47μF / 25V
C233	08S65128F57	CP., 1000pF
C234	08S65128F57	CP., 1000pF
C235	08S65128F35	CP., 100pF
C236	08S65128F35	CP., 100pF
C237	08S65128F35	CP., 100pF
E261	23T45102W04	ELY., 100μF / 10V
C271	08S65128F12	CP., 10pF
C272	08S65128F12	CP., 10pF
C273	08S65128F12	CP., 10pF
C274	08S65128F12	CP., 10pF
E819	23T45102W04	ELY., 100μF / 10V
E820	23T55405W03	ELY., 47μF / 16V
E822	23T45102W04	ELY., 100μF / 10V
C841	08S65128F76	CP., 0.1μF

Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)

R203	06S64995F85	22K ohm
R204	06S64995F85	22K ohm
R205	06S64995F85	22K ohm
R206	06S64995F85	22K ohm
R207	06S64995F85	22K ohm
R208	06S64995F85	22K ohm
R209	06S64995F85	22K ohm
R210	06S64995F85	22K ohm
R211	06S64995F71	5.6K ohm
R212	06S64995F61	2.2K ohm
R213	06S64995F85	22K ohm
R214	06S64995F85	22K ohm
R216	06S64995F77	10K ohm
R218	06S64995F85	22K ohm
R220	06S64995F91	39K ohm
R221	06S64995F88	30K ohm
R222	06S64995F88	30K ohm
R223	06S64995F91	39K ohm
R224	06S64995F91	39K ohm
R225	06S64995F85	22K ohm
R226	06S64995F85	22K ohm
R228	06S64995F91	39K ohm
R229	06S64995F91	39K ohm
R230	06S64995F85	22K ohm
R231	06S64995F85	22K ohm
R232	06S64995F61	2.2K ohm
R233	06S64995F61	2.2K ohm
R234	06S64995F61	2.2K ohm
R242	06S64995F53	1K ohm
R244	06S64995F71	5.6K ohm
R245	06S64995F71	5.6K ohm
R246	06S64995F71	5.6K ohm
R247	06S64995F71	5.6K ohm
R248	06S64995F77	10K ohm
R249	06S64995F77	10K ohm
R252	06S64995F29	100 ohm
R253	06S64995F29	100 ohm
R254	06S64995F29	100 ohm
R255	06S64995F29	100 ohm
R256	06S64995F29	100 ohm
R257	06S64995F29	100 ohm
R258	06S64995F29	100 ohm
R259	06S64995F29	100 ohm
R262	06S64995F85	22K ohm
R263	06S64995F85	22K ohm
R264	06S64995F77	10K ohm
R265	06S64995F77	10K ohm
R266	06S64995F85	22K ohm
R267	06S64995F85	22K ohm
R268	06S64995F91	39K ohm
R269	06S64995F85	22K ohm
R270	06S64995F77	10K ohm
R271	06S64995F85	22K ohm
R272	06S64995F85	22K ohm
R273	06S64995F85	22K ohm
R274	06S64995F85	22K ohm
R275	06S64995F85	22K ohm
R276	06S64995F85	22K ohm
R277	06S64995F85	22K ohm
R278	06S64995F85	22K ohm

Symbol No.	Part No.	Description
R712	06S70072F45	470 ohm 1/4W
R713	06S70072F45	470 ohm 1/4W
R843	06S70072F37	220 ohm 1/4W
R845	06S64995F86	24K ohm
R846	06S64995F67	3.9K ohm
R847	06S64995F85	22K ohm
R848	06S64995F85	22K ohm
R849	06S64995F77	10K ohm
R851	06S70072F09	15 ohm 1/4W
R852	06S70072F30	110 ohm 1/4W
R853	06S70072F15	27 ohm 1/4W
R854	06S70072F30	110 ohm 1/4W
R855	06S70072F30	110 ohm 1/4W
R856	06S70072F09	15 ohm 1/4W
R857	06S70072F30	110 ohm 1/4W
R860	06S64995F81	15K ohm
R864	06S64995F77	10K ohm

Tuner (1) P. C. Board

IC's

IC005	51T35503W02	LC7073M
IC006	51T55054W02	SAA6579T
IC501	51T45258W01	45258W01
IC502	51T93532F04	TC4S81F
IC503	51T84723F02	LC3516AML
IC504	51T55640W01	MC74HC373

Transistors

Q015	48T94606F59	CP., DTA143XU
Q016	48T94606F03	CP., DTC124EU
Q501	48T80674F01	FET, CP. 2SK621
Q502	48T73888F12	CP., FMC2

Diodes

D007	48T94608F03	CP., DAN202U
D501	48T94608F03	CP., DAN202U
D502	48T94608F03	CP., DAN202U

Symbol No.	Part No.	Description

Crystals

X001	91T65014W01	CP., 4MHz
X002	91T45433W18	CP., 4.332MHz
X501	91T45433W44	CP., 7.3728MHz

Capacitors

E011	23S55311W22	CP., TAN. 4.7µF / 10V
E020	23S55311W31	CP., TAN. 2.2µF / 16V
C022	08S45677W28	CP., 47pF
C023	08S45677W48	CP., 330pF
C024	08S82122F55	CP., 560pF
C029	08S45677W34	CP., 82pF
C054	08S45676W76	CP., 0.022µF
C055	08S45676W76	CP., 0.022µF
C501	08S45677W22	CP., 27pF
E501	23S55311W22	CP., TAN. 4.7µF / 10V
C502	08S45677W22	CP., 27pF
C503	08S45676W36	CP., 100pF
E503	23S55311W64	CP., TAN. 0.33µF / 35V
C504	08S45676W36	CP., 100pF
C505	08S45676W36	CP., 100pF
C506	08S45676W36	CP., 100pF
C507	08S45676W36	CP., 100pF
C508	08S45676W76	CP., 0.022µF
C509	08S45676W76	CP., 0.022µF
C510	08S45676W76	CP., 0.022µF
C511	08S45676W36	CP., 100pF
C512	08S45676W36	CP., 100pF
C513	08S45676W36	CP., 100pF
C514	08S45676W36	CP., 100pF
C515	08S45676W36	CP., 100pF
C516	08S45676W36	CP., 100pF
C551	08S45676W76	CP., 0.022µF
C571	08S45676W36	CP., 100pF
C572	08S45676W36	CP., 100pF
C573	08S45676W76	CP., 0.022µF
C575	08S45676W36	CP., 100pF

Resistors (All resistors are chip 1/16W±5% unless otherwise noted.)

R050	06S45674W33	100 ohm
R088	06S45674W65	2.2K ohm
R501	06S45675W06	100K ohm

Symbol No.	Part No.	Description
R502	06S45674W57	1K ohm
R503	06S45674W97	47K ohm
R504	06S45674W97	47K ohm
R505	06S45674W97	47K ohm
R506	06S45674W97	47K ohm
R507	06S45674W97	47K ohm
R508	06S45674W97	47K ohm
R509	06S45674W81	10K ohm
R510	06S45674W81	10K ohm
R511	06S45675W42	10M ohm
R521	06S45674W57	1K ohm
R522	06S45674W57	1K ohm
R523	06S45674W57	1K ohm

Tuner (2) P. C. Board

IC's

IC001	51T40941U02	MC14066BFEL
IC002	51T93336F01	NJM4558M
IC003	51T93336F01	NJM4558M
IC007	51T93336F01	NJM4558M
IC008	51T35504W02	LC7219
IC011	51T90890F01	M5236ML

Transistors

Q002	48T94606F53	CP., DTA124EU
Q003	48T94606F05	CP., DTC114TU
Q004	48T94606F03	CP., DTC124EU
Q007	48T73888F08	CP., FMG1
Q008	48T94606F03	CP., DTC124EU
Q009	48T94875F06	CP., DTB113ZK
Q010	48T94875F06	CP., DTB113ZK
Q011	48T94606F03	CP., DTC124EU
Q012	48T80615F01	CP., 2SD1766
Q013	48T94581F01	CP., 2SA1576
Q014	48T80615F01	CP., 2SD1766
Q021	48T73888F08	CP., FMG1

Diodes

D002	48T94608F03	CP., DAN202U
D003	48T94608F03	CP., DAN202U
D004	48T94608F03	CP., DAN202U
D005	48T94608F03	CP., DAN202U
D006	48T94608F03	CP., DAN202U
ZD002	48T62934F21	Zener, CP. RD5.6MB1
ZD003	48T62934F37	Zener, CP. RD9.1MB2

Crystal

X003	91T45433W43	CP., 7.2MHz

Capacitors

E001	23S55311W31	CP., TAN. 2.2μF / 16V
C003	08S45676W76	CP., 0.022μF
E003	23S55311W31	CP., TAN. 2.2μF / 16V
C004	08S45676W76	CP., 0.022μF
E004	23S55311W61	CP., TAN. 0.1μF / 35V
C005	08S65128F78	CP., 0.022μF
E005	23S55311W61	CP., TAN. 0.1μF / 35V
E006	23S55311W66	CP., TAN. 0.68μF / 35V
C007	08S45676W73	CP., 0.01μF
E007	23S55311W12	CP., TAN. 6.8μF / 6.3V
C008	08T15399W02	CP., 0.033μF
E008	23S55311W22	CP., TAN. 4.7μF / 10V
C009	08S45676W73	CP., 0.01μF
C010	08T35374W01	CP., 0.1μF
E010	23S55311W22	CP., TAN. 4.7μF / 10V
C011	08T15399W02	CP., 0.033μF
C012	08T55487W01	CP., 0.15μF
E012	23S55311W64	CP., TAN. 0.33μF / 35V
C013	08S45676W73	CP., 0.01μF
E013	23S55311W22	CP., TAN. 4.7μF / 10V
C014	08S45676W73	CP., 0.01μF
E014	23S55311W31	CP., TAN. 2.2μF / 16V
C015	08S45677W36	CP., 100pF
E015	23S55311W42	CP., TAN. 4.7μF / 20V
C016	08S65128F76	CP., 0.1μF
E016	23S55311W31	CP., TAN. 2.2μF / 16V
C017	08S45676W76	CP., 0.022μF
E017	23S55311W31	CP., TAN. 2.2μF / 16V
C018	08S45676W76	CP., 0.022μF
C019	08S45676W73	CP., 0.01μF
C020	08S45677W18	CP., 18pF
C021	08S45677W18	CP., 18pF
C025	08S65128F57	CP., 1000pF
C026	08S45676W75	CP., 0.015μF
C027	08S45676W75	CP., 0.015μF
C030	08S45676W36	CP., 100pF
C031	08S45676W58	CP., 820pF
C033	08S45677W48	CP., 330pF
C035	08S45677W48	CP., 330pF
C036	08S45676W58	CP., 820pF
C037	08T55610W01	CP., 1μF

Symbol No.	Part No.	Description
C038	08T55610W01	CP., 1μF
C039	08S45676W36	CP., 100pF
C041	08S45676W76	CP., 0.022μF
C042	08S45676W76	CP., 0.022μF
C043	08S45676W76	CP., 0.022μF
C047	08S45676W36	CP., 100pF
C048	08S45676W36	CP., 100pF
C050	08S45676W36	CP., 100pF
C051	08S45676W36	CP., 100pF
C052	08S45676W36	CP., 100pF
C101	08S45676W73	CP., 0.01μF
C102	08S45677W36	CP., 100pF
C112	08S45676W76	CP., 0.022μF
C113	08S65128F76	CP., 0.1μF

Resistors (All resistors are chip 1/16W±5% unless otherwise noted.)

R003	06S45674W81	10K ohm
R009	06S45674W81	10K ohm
R010	06S45674W81	10K ohm
R011	06S45674W81	10K ohm
R012	06S45674W81	10K ohm
R013	06S53330F61	2.2K ohm 1/8W
R014	06S45674W41	220 ohm
R015	06S45674W65	2.2K ohm
R016	06S45674W33	100 ohm
R017	06S45674W81	10K ohm
R018	06S45674W89	22K ohm
R019	06S45674W57	1K ohm
R020	06S45674W65	2.2K ohm
R021	06S45674W57	1K ohm
R022	06S45674W75	5.6K ohm
R024	06S45674W81	10K ohm
R025	06S45675W06	100K ohm
R026	06S45675W24	560K ohm
R027	06S45674W73	4.7K ohm
R028	06S45675W18	330K ohm
R029	06S53330F29	100 ohm 1/8W
R032	06S45674W65	2.2K ohm
R035	06S70072F41	330 ohm 1/4W
R036	06S70072F37	220 ohm 1/4W
R037	06S70072F53	1K ohm 1/4W
R038	06S45674W85	15K ohm
R039	06S45674W90	24K ohm
R040	06S45674W71	3.9K ohm
R042	06S45674W57	1K ohm
R048	06S45674W97	47K ohm
R049	06S45674W81	10K ohm
R051	06S45675W06	100K ohm

Symbol No.	Part No.	Description
R061	06S45674W87	18K ohm
R062	06S45674W97	47K ohm
R064	06S45674W87	18K ohm
R065	06S45674W97	47K ohm
R067	06S45674W92	30K ohm
R080	06S45674W81	10K ohm
R081	06S45674W81	10K ohm
R086	06S45675W06	100K ohm
R087	06S45675W06	100K ohm

Mini P. C. Board

Switches

S401	40T35140W22	Tact, SKQDAB (EJECT)
S402	40T35140W22	Tact, SKQDAB (CLK)
S403	40T35140W22	Tact, SKQDAB (M.S. / CD · DOWN)
S404	40T35140W22	Tact, SKQDAB (PWR)
S405	40T35140W22	Tact, SKQDAB (M.S. / CD · UP)

Lamps

PL411	65T45353W02	6V-70mA
PL412	65T45353W01	6V-70mA
PL413	65T45353W02	6V-70mA

LED

LD401	48T92014F01	EBR3402S (RED)

Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)

R451	06S64995F63	2.7K ohm
R452	06S64995F69	4.7K ohm
R453	06S64995F77	10K ohm
R454	06S64995F89	33K ohm
R455	06S70072F33	150 ohm 1/4W

Symbol No.	Part No.	Description
Tuner Control P. C. Board		
Transistor		
Q001	48T73888F08	CP., FMG1
Surge Protector		
DSP001	48T81048F02	DSP-201M
Capacitors		
C001	08S65128F69	CP., 0.01μF
E002	23S55311W65	CP., TAN. 0.47μF / 35V
C006	08S65128F29	CP., 56pF
C044	08S65128F35	CP., 100pF
C046	08S65128F69	CP., 0.01μF
Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)		
R001	06S64995F53	1K ohm
R002	06S64995F77	10K ohm
R006	06S64995F93	47K ohm
R007	06S64995F93	47K ohm
Front P. C. Board		
IC's		
IC401	51T16618W02	MC14014BFEL
IC402	51T55492W01	LC75850W
Transistors		
Q401	48T63461F01	CP., 2SC2411K
Q402	48T63461F01	CP., 2SC2411K
Q403	48T63461F01	CP., 2SC2411K
Q404	48T63461F01	CP., 2SC2411K
Q405	48T94606F05	CP., DTC114TU
Diode		
D401	48T94471F01	CP., IMN10

Symbol No.	Part No.	Description
Switches		
S404	40T55182W01	Tact, SKHVBC (3 / A.P.I.)
S405	40T55182W01	Tact, SKHVBC (2 / MONO)
S406	40T55182W01	Tact, SKHVBC (1 / DX / A. ME)
S407	40T55182W01	Tact, SKHVBC (6 / M / SCAN)
S408	40T55182W01	Tact, SKHVBC (5 / H / REPEAT)
S409	40T55182W01	Tact, SKHVBC (4 / CT / M.I.X.)
S413	40T55571W01	Tact, SKQAXX (UP)
S414	40T55571W01	Tact, SKQAXX (DOWN)
S415	40T55182W01	Tact, SKHVBC (MODE / LOUD)
S416	40T55182W01	Tact, SKHVBC (TUNER / BAND / D.A.P.)
S417	40T55182W01	Tact, SKHVBC (3 DISC · PLAY / PAUSE)
S418	40T55182W01	Tact, SKHVBC (6 DISC · PLAY / PAUSE)
S420	40T55182W01	Tact, SKHVBC (T.INFO / PTY)
S421	40T55182W01	Tact, SKHVBC (FUNC)
Lamps		
PL401	65T55442W02	6.7V-85mA
PL402	65T55442W03	6.7V-85mA
PL403	65T45353W01	6V-70mA
PL404	65T45353W01	6V-70mA
PL405	65T45353W01	6V-70mA
PL406	65T45353W01	6V-70mA
PL407	65T45353W02	6V-70mA
PL408	65T45353W02	6V-70mA
PL409	65T45353W02	6V-70mA
PL410	65T45353W02	6V-70mA
Capacitors		
C401	08S65128F74	CP., 0.047μF
E401	23S61523F12	ELY., 10μF / 16V
C402	08S65128F51	CP., 470pF
C403	08S65128F41	CP., 180pF
C404	08S65128F41	CP., 180pF
C405	08S65128F41	CP., 180pF
C406	08S65128F41	CP., 180pF
C407	08S65128F41	CP., 180pF
C408	08S65128F41	CP., 180pF
C409	08S65128F41	CP., 180pF
C410	08S65128F41	CP., 180pF

Symbol No.	Part No.	Description
Resistors (All resistors are chip 1/10W±5% unless otherwise noted.)		
R401	06S64995F77	10K ohm
R402	06S64995F77	10K ohm
R403	06S64995F77	10K ohm
R404	06S64995F77	10K ohm
R405	06S64995F77	10K ohm
R406	06S64995F77	10K ohm
R407	06S64995F77	10K ohm
R408	06S64995F75	8.2K ohm
R411	06S64995F93	47K ohm
R412	06S64995F93	47K ohm
R413	06S64995F93	47K ohm
R414	06S64995F93	47K ohm
R415	06S64995F93	47K ohm
R416	06S64995F93	47K ohm
R417	06S70072F89	9.1 ohm 1/4W
R418	06S70072F13	22 ohm 1/4W
R419	06S70072F31	120 ohm 1/4W
R420	06S70072F33	150 ohm 1/4W
R421	06S70072F27	82 ohm 1/4W
R422	06S70072F27	82 ohm 1/4W
R423	06S70072F53	1K ohm 1/4W
R424	06S70072F53	1K ohm 1/4W
R425	06S70072F53	1K ohm 1/4W
R426	06S70072F53	1K ohm 1/4W
R427	06S64996F04	120K ohm
R429	06S70072F31	120K ohm 1/4W
R430	06S64995F65	3.3K ohm
R431	06S70072F33	150 ohm 1/4W
R432	06S70072F27	82 ohm 1/4W
R433	06S70072F27	82 ohm 1/4W
R440	06S64995F81	15K ohm

CD - LSI P. C. Board

IC's

IC1101	51T25985W02	TC9236AF
IC1102	51T25984W01	TA8191F
IC1103	51T92001F11	BA4560F
IC1104	51T35409W03	PCM67U
IC1106	51T35105W02	SM5840CS
IC1109	51T45285W02	SC7SU04F

Symbol No.	Part No.	Description
Transistors		
Q1101	48T94606F03	CP., DTC124EU
Q1103	48T80611F01	CP., 2SB1132
Q1104	48T94581F01	CP., 2SA1576
Q1111	48T94582F01	CP., 2SC4081
Q1112	48T94606F05	CP., DTC114TU
Q1113	48T94606F05	CP., DTC114TU
Q1114	48T94606F03	CP., DTC124EU
Q1115	48T94606F53	CP., DTA14EU
Q1116	48T94606F03	CP., DTC124EU
Q1201	48T94582F01	CP., 2SC4081
Diode		
ZD1101	48T62934F22	CP. Zener, RD5.6MB2
Crystal		
X1101	91T45433W92	16.934MHz
Capacitors		
C1101	08S45676W73	CP., 0.01µF
E1101	23T74180F02	CP., 100µF / 6.3V
C1102	08S65128F76	CP., 0.1µF
E1102	23S55311W13	CP., TAN. 10µF / 6.3V
C1103	08S45676W12	CP., 10pF
E1103	23T55649W01	CP., ELY. 10µF / 4V
C1104	08S45676W12	CP., 10pF
E1104	23S55311W23	CP., TAN. 10µF / 10V
C1105	08S45676W67	CP., 3300pF
E1105	23T55649W25	CP., ELY. 3.3µF / 16V
C1106	08S45676W67	CP., 3300pF
C1107	08S45676W36	CP., 100pF
E1107	23S55311W13	CP., TAN. 10µF / 6.3V
C1108	08S45676W73	CP., 0.01µF
C1109	08S45676W73	CP., 0.01µF
C1111	08S45676W60	CP., 1000pF
C1113	08S45676W75	CP., 0.015µF
C1114	08S45676W68	CP., 3900pF
C1115	08T35374W01	CP., 0.1µF
C1116	08S45676W44	CP., 220pF
C1117	08S45767W66	CP., 2700pF
E1117	23T55649W53	CP., ELY. 0.47µF / 50V
C1118	08T15399W03	CP., 0.047µF
E1118	23S55311W23	CP., TAN. 10µF / 10V
C1119	08S45676W30	CP., 56pF

Symbol No.	Part No.	Description
C1120	08S45676W73	CP., 0.01μF
E1120	23T55649W01	CP., ELY. 10μF / 4V
C1121	08S45676W14	CP., 12pF
E1121	23T55649W01	CP., ELY. 10μF / 4V
C1122	08S45676W73	CP., 0.01μF
C1123	08T35374W01	CP., 0.1μF
C1124	08S45677W05	CP., 3pF
C1125	08S45676W73	CP., 0.01μF
C1126	08T35374W01	CP., 0.1μF
C1128	08S45676W73	CP., 0.01μF
E1128	23S55311W23	CP., TAN. 10μF / 10V
C1129	08S45676W73	CP., 0.01μF
C1130	08S45676W69	CP., 4700pF
E1130	23T55649W52	CP., ELY. 0.33μF / 50V
C1133	08S45676W73	CP., 0.01μF
C1140	08S45676W69	CP., 4700pF
E1140	23S55311W13	CP., TAN. 10μF / 6.3V
E1141	23S55311W23	CP., TAN. 10μF / 10V
C1142	08S45676W64	CP., 1800pF
E1142	23T55649W01	CP., ELY. 10μF / 4V
E1143	23T55649W01	CP., ELY. 10μF / 4V
C1144	08S45676W12	CP., 10pF
C1145	08S45676W73	CP., 0.01μF
C1146	08S45676W73	CP., 0.01μF
C1202	08S45676W73	CP., 0.01μF
C1203	08S82122F61	CP., 1000pF
E1203	23T74180F02	CP., ELY. 47μF / 6.3V
C1204	08S82122F61	CP., 1000pF
E1204	23T55649W01	CP., ELY. 10μF / 4V
C1205	08S45676W73	CP., 0.01μF
E1205	23T25191W39	CP., ELY. 6.8μF / 6.3V
C1206	08S45676W73	CP., 0.01μF
E1206	23T55649W17	CP., ELY. 4.7μF / 10V
E1207	23T55649W17	CP., ELY. 4.7μF / 10V

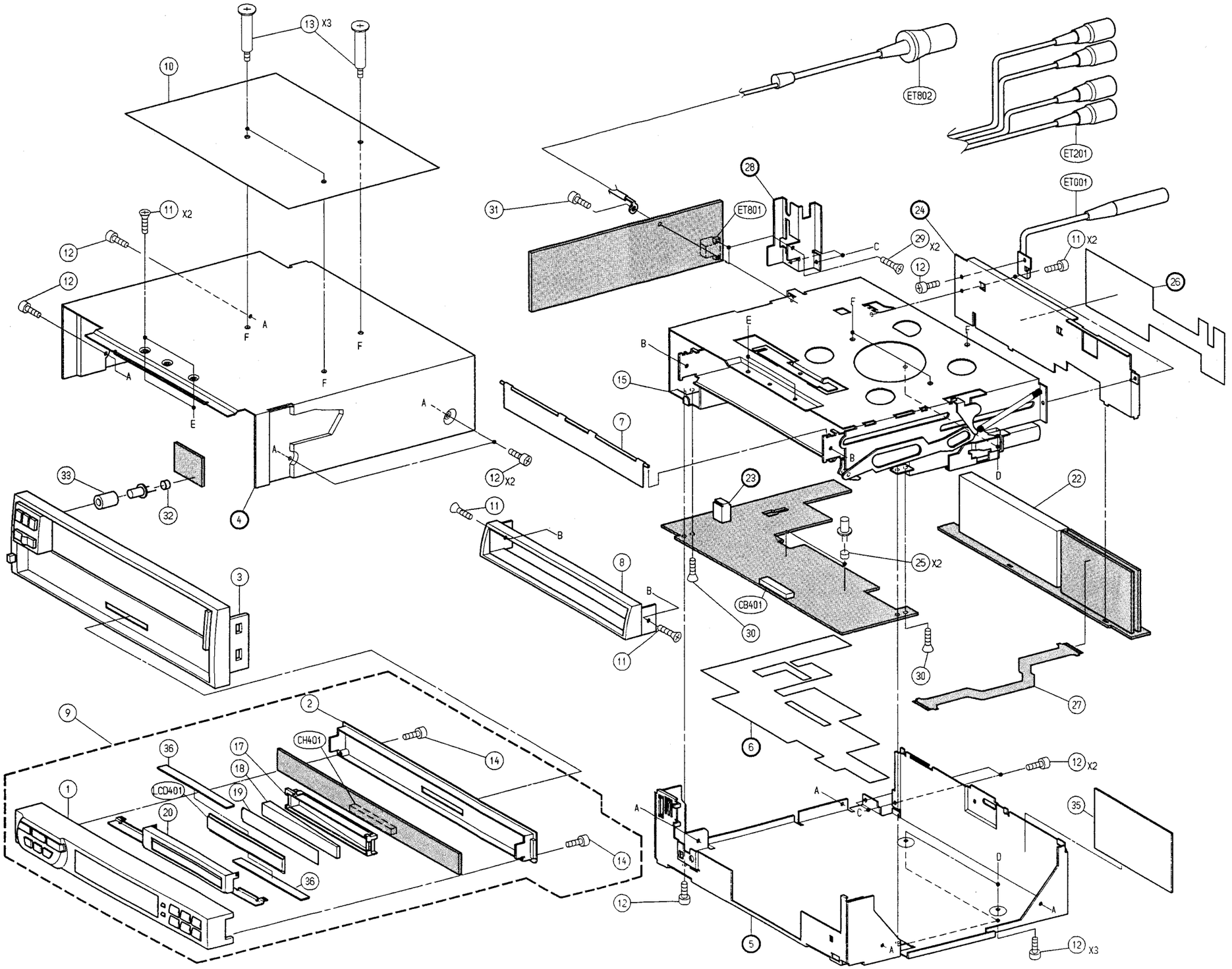
Resistors (All resistors are chip 1/16W±5% unless otherwise noted.)

R1101	06S45674W77	6.8K ohm
R1102	06S45675W22	470K ohm
R1103	06S45674W43	270 ohm
R1105	06S45675W06	100K ohm
R1106	06S45674W89	22K ohm
R1107	06S45675W14	220K ohm
R1108	06S45675W06	100K ohm
R1109	06S45674W87	18K ohm
R1110	06S45674W61	1.5K ohm
R1111	06S45674W87	18K ohm
R1112	06S45674W95	39K ohm
R1113	06S45674W57	1K ohm
R1114	06S45675W14	220K ohm
R1115	06S45674W81	10K ohm
R1116	06S45674W97	47K ohm
R1117	06S45675W34	2.2M ohm
R1118	06S45674W93	33K ohm
R1119	06S45674W99	56K ohm
R1120	06S45674W81	10K ohm
R1121	06S45674W91	27K ohm
R1122	06S45674W67	2.7K ohm
R1123	06S45675W16	270K ohm
R1124	06S45674W87	18K ohm
R1125	06S45674W97	47K ohm
R1126	06S45674W81	10K ohm
R1127	06S45675W06	100K ohm
R1128	06S45675W06	100K ohm
R1129	06S45674W85	15K ohm
R1130	06S45674W89	22K ohm
R1131	06S45674W81	10K ohm
R1132	06S45674W81	10K ohm
R1133	06S45674W81	10K ohm
R1134	06S45675W24	560K ohm
R1135	06S45675W06	100K ohm
R1136	06S45674W65	2.2K ohm
R1137	06S45674W81	10K ohm
R1138	06S45674W73	4.7K ohm
R1139	06S45674W73	4.7K ohm
R1140	06S45674W73	4.7K ohm
R1141	06S70072F05	10 ohm 1/4W
R1144	06S45674W57	1K ohm
R1145	06S45674W43	270 ohm
R1146	06S45674W73	4.7K ohm
R1147	06S45675W02	68K ohm
R1167	06S45675W08	120K ohm
R1169	06S45674W57	1K ohm
R1170	06S45674W57	1K ohm
R1171	06S45674W57	1K ohm
R1172	06S45674W57	1K ohm
R1173	06S45674W49	470 ohm
R1179	06S45674W67	2.7K ohm
R1180	06S45674W81	10K ohm
R1181	06S45674W89	22K ohm
R1183	06S45675W14	220K ohm
R1185	06S45674W87	18K ohm
R1186	06S45674W57	1K ohm
R1187	06S45674W57	1K ohm
R1188	06S45674W69	3.3K ohm
R1189	06S45675W22	470K ohm
R1190	06S45674W97	47K ohm
R1192	06S45674W81	10K ohm
R1193	06S45674W57	1K ohm
R1194	06S45674W57	1K ohm
R1195	06S45674W57	1K ohm

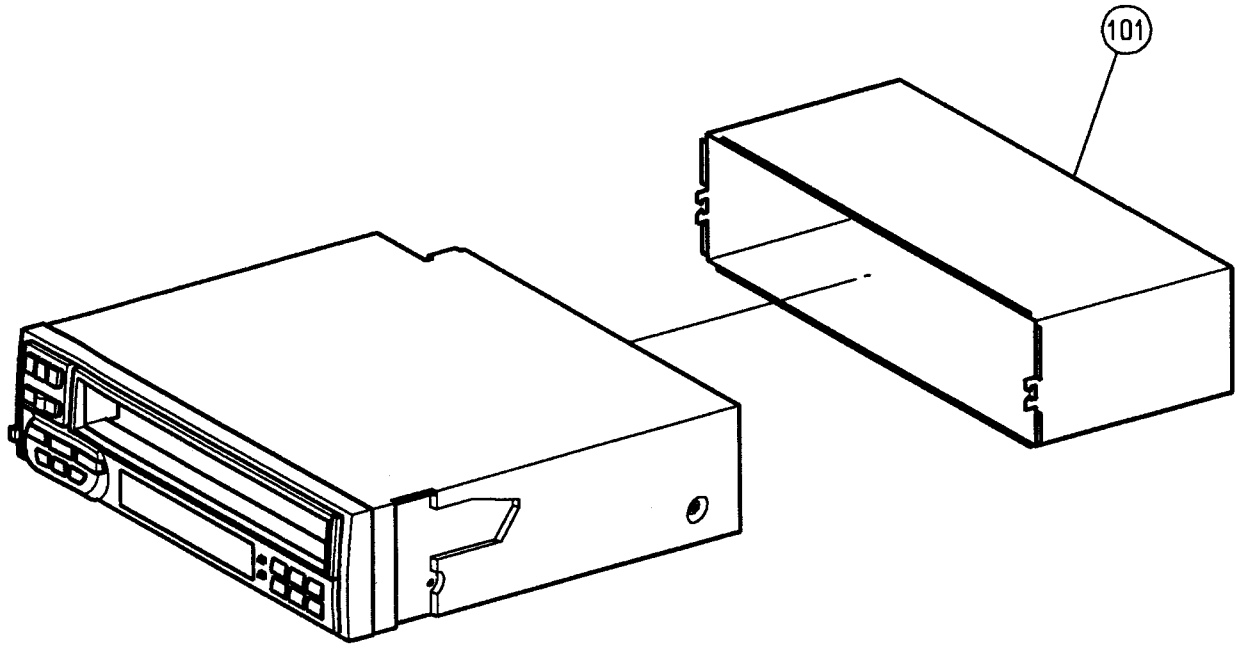
Symbol No.	Part No.	Description
R1196	06S45674W41	220 ohm
R1201	06S45674W64	2K ohm
R1202	06S45674W64	2K ohm
R1204	06S45674W97	47K ohm
R1205	06S45674W49	470 ohm
VR1101	18T55283W20	Variable, 150K ohm
VR1102	18T55283W14	Variable, 15K ohm
VR1103	18T55283W09	Variable, 2.2K ohm
Driver P. C. Board		
IC		
IC1105	51T45577W02	BA6298FP
Transistor / Switch		
Q1102	48T35437W01	2SB1182TL
S1706	40T35543W02	Switch, Detector (LIMIT)
Capacitors		
E1106	23T55649W23	CP., ELY. 47μF / 10V
E1108	23T55649W10	CP., ELY. 10μF / 6.3V
C1110	08S65128F76	CP., 0.1μF
Resistors (All resistors are chip 1/16W±5% unless otherwise noted.)		
R1104	06S45674W33	100 ohm
R1142	06S45674W33	100 ohm
R1143	06S70072F90	1 ohm 1/4W
R1203	06S64995F55	1.2K ohm 1/10W
Miscellaneous		
CB401	09T55607W14	Connector (14P)
CH401	09T55608W17	Connector (17P)
ET001	01T15513W10	Antenna Receptacle
ET201	01T25455W10	RCA Output Connector
ET801	09T55578W01	Power Supply Connector
ET802	01T55567W01	DIN Connector
HD1101	88T35580W01	Pick up Unit
LCD401	65T55565W01	LCD Display
LD1701	48T16057W02	LED, AN501-B1 (RED)
LD1702	48T16057W01	LED, AN501 (RED)

Symbol No.	Part No.	Description
LD1703	48T16057W01	LED, AN501 (RED)
M1102	01V41200W24	Assy., Sled Motor (3.5V-200mA)
M1103	01V61900W99	Assy., Tray Motor (6V-260mA)
M1104	01V63100W04	Assy., Loading Motor (7V-260mA)
PT1303	48T35506W04	TR., Photo PS3062
Q1117	48T63420F04	TR., CP. 2SA1037K
S1701	40T15222W01	Switch, Detector (LOADING)
S1702	40T15222W01	Switch, Detector (HMP)
S1703	40T25956W01	Switch, Detector (MAGAZINE)
S1704	40T35543W02	Switch, Detector (TRAY OUT)
S1705	40T15222W01	Switch, Detector (TRAY IN)

Exploded View (Cabinet) (1/2)



Exploded View (Cabinet) (2/2)



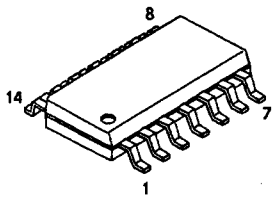
Cabinet Assembly Parts List

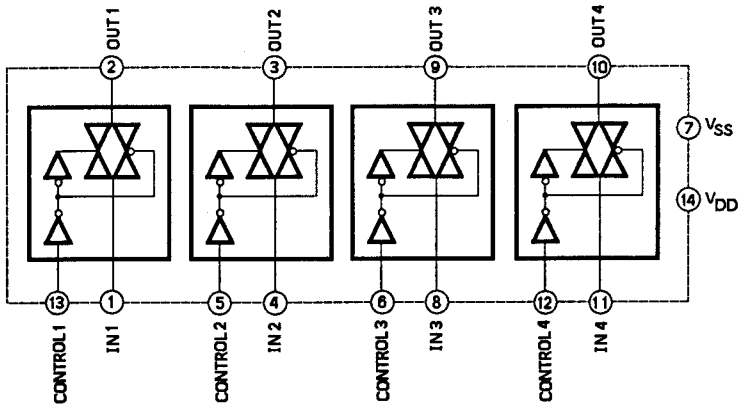
Note : No parts number on parts list are not supplied.

Symbol No.	Index	Part No.	Description
1	5-B	13C51336W02	Assy., Nosepiece
2	4-C	13D51346W01	Nose, Bottom
3	4-B	13C51356W01	Assy., Front Escutcheon
7	3-D	15C41627W05	Assy., Cover Door
8	4-D	64C51347W01	Plate, Door
9	4-B	01V61100W60	Assy., Nose Unit
10	1-B	54B41631W01	Card, Caution
11		03S94385F32	Screw, Nylok Pan (M2×2.2)
12		03S44205G29	Screw, Pan (M2.6×6)
13	1-C	03A48066W02	Screw, Transport (M4×34.3)
14		03S68555F36	Screw, Pan (M2×10)
15	3-D	81T55525W01	Changer Mechanism, DS24A020
17	4-B	15B51787W01	Case, LCD
18	4-B	61A51350W01	Lens, LCD
19	5-B	26A51351W01	Reflector, Sheet
20	5-B	26B51788W01	Shield, LCD
22	3-F	77T55563W01	FM/AM Tuner Unit, TFTC5E111A (FE001)
25	3-F	43A53357F02	Spacer
27	4-F	84B60020W01	FPC Tuner P.C.Board
29	2-F	03S68555F22	Screw, Countersink (M3×8)
30	4-E	03S44205G13	Screw, Countersink (M2.6×6)
31	2-D	03S44205G48	Screw, Pan (M2.6×5)
32	3-B	43A60671W01	Spacer, LED
33	3-B	43A62458F07	Bushing, Cover
35	5-G	14B60694W01	Insulator, Bottom
36		75T35021W06	Rubber, Electric
101		15D50406W01	Case, Inner

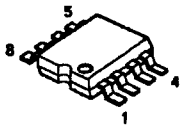
Semi - Conductor Lead Identifications

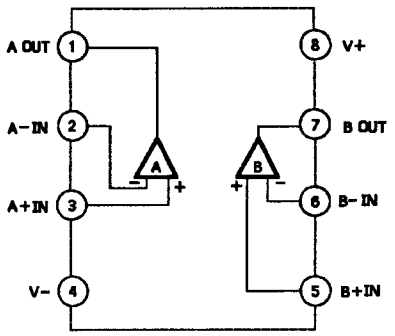
MC14066BFEL : IC001



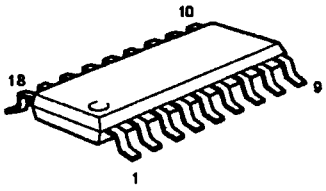


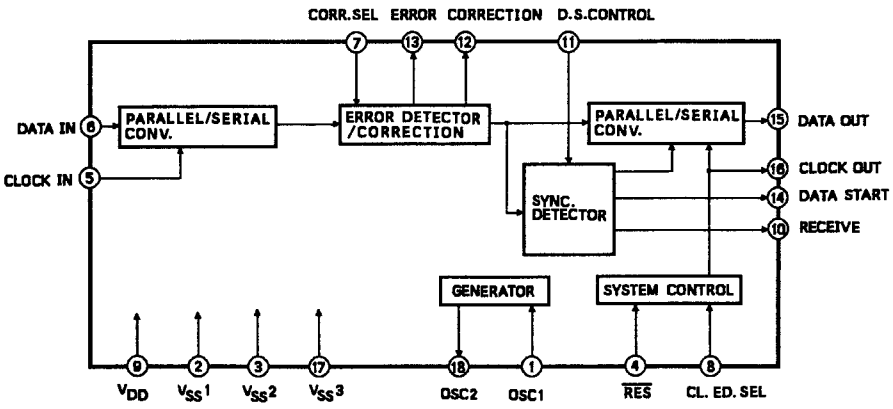
NJM4558M : IC002, 003, 007
NJM4560E : IC201, 209, 210, 212
BA4560F : IC1103 (DS24A020)



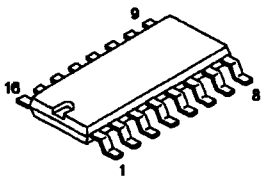


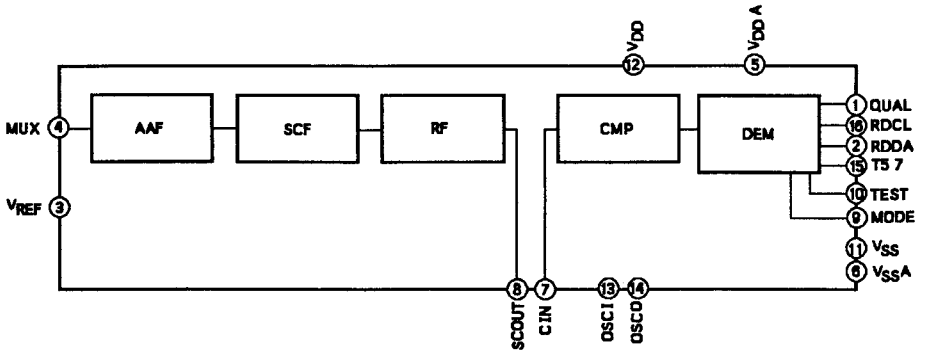
LC7073M : IC005



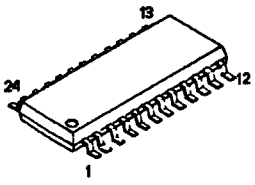


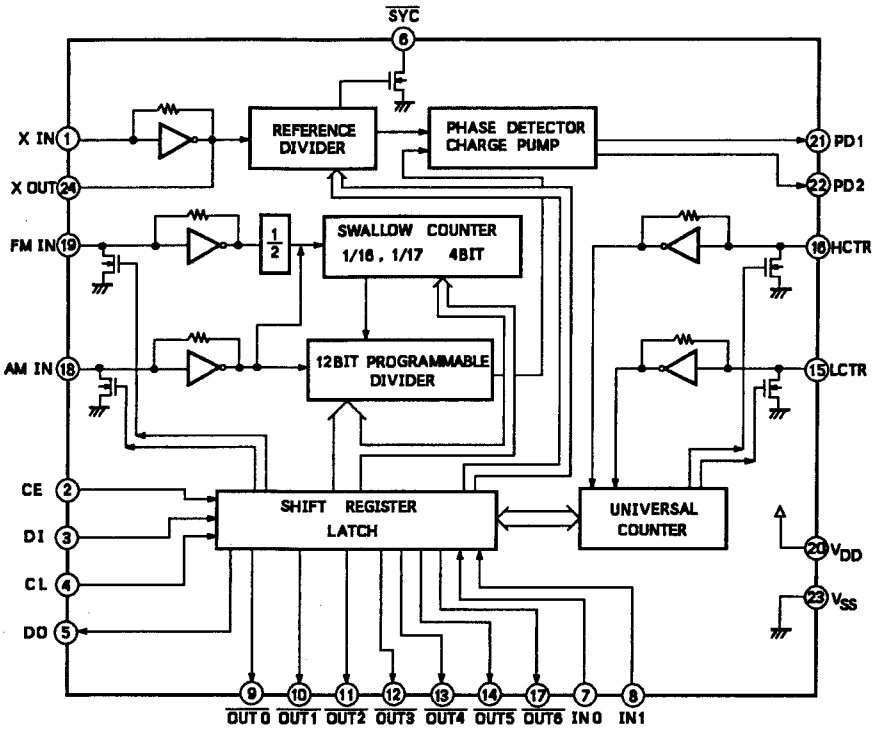
SAA6579T : IC006



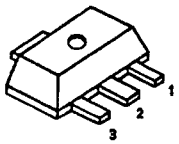


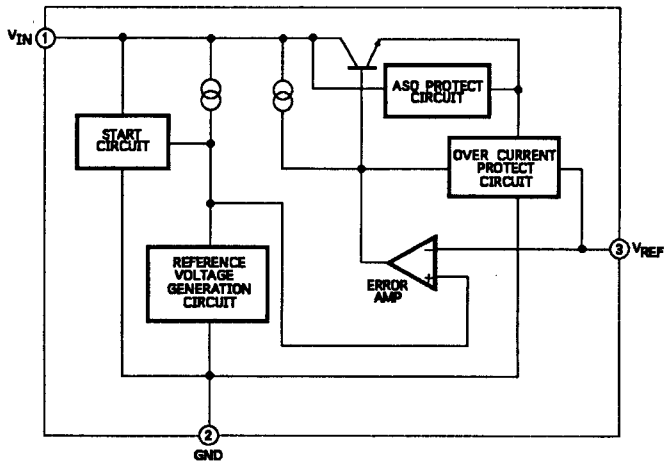
LC7219 : IC008



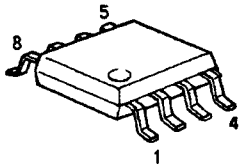


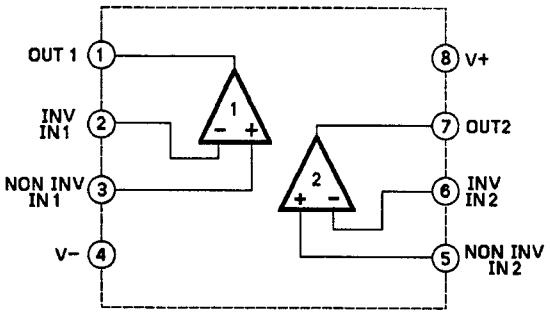
M5236ML : IC011, 802



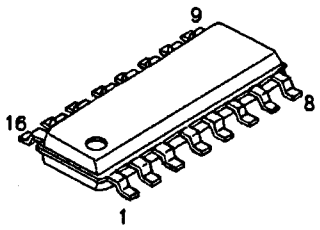


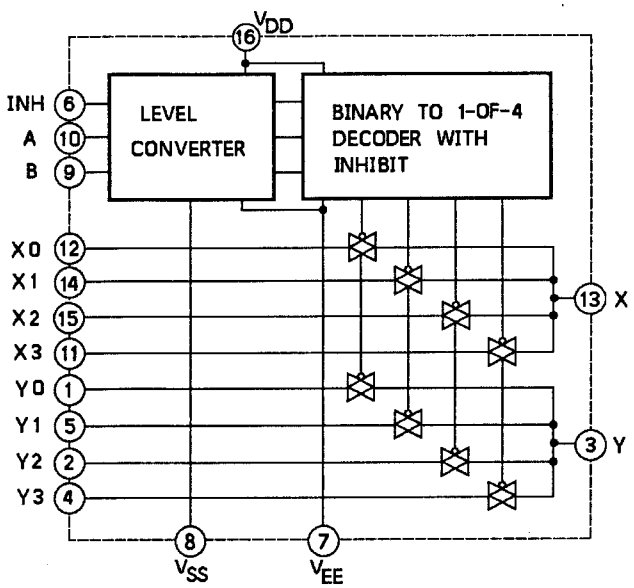
M5218AFP : IC202, 803



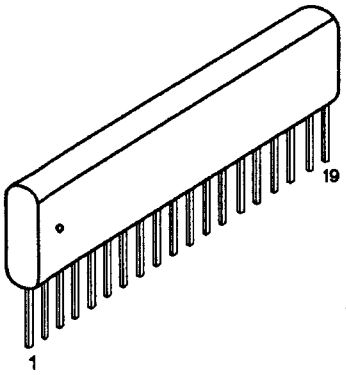


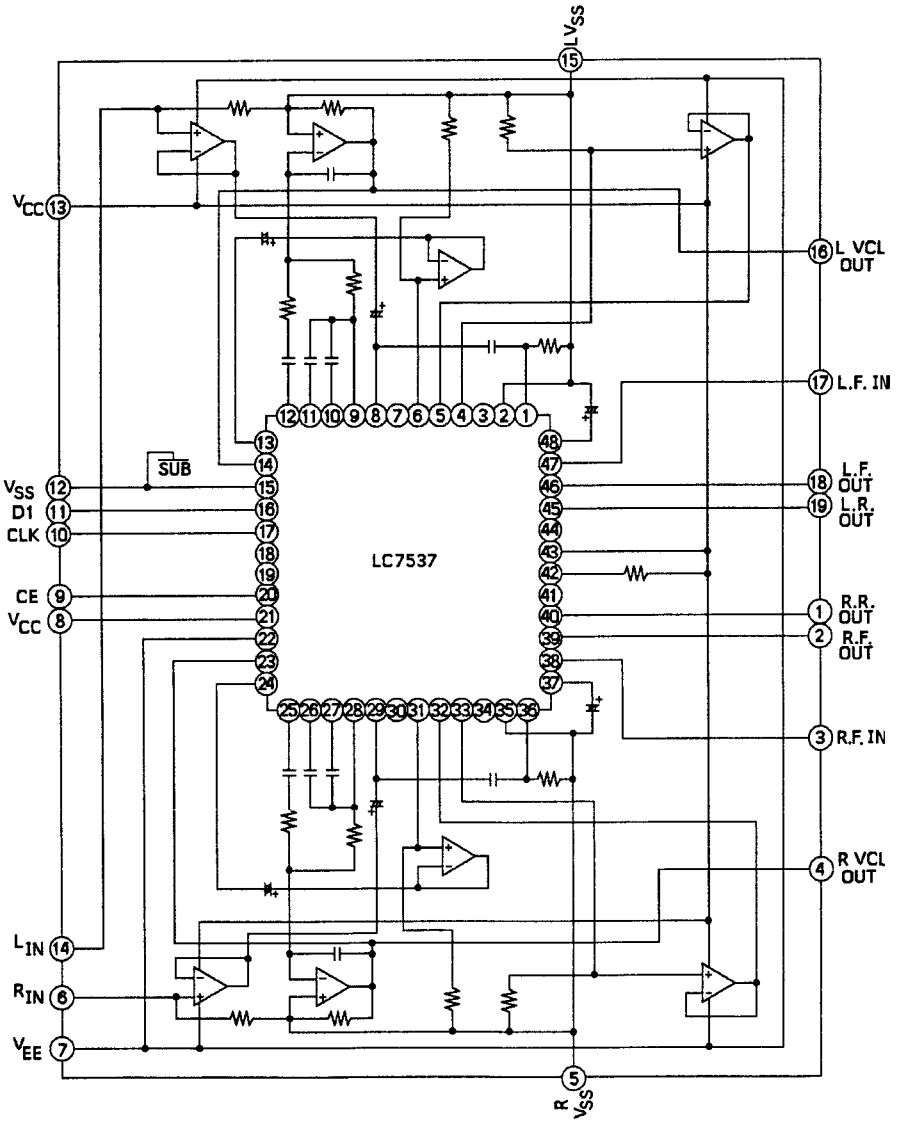
MC14052BFL1 : IC203



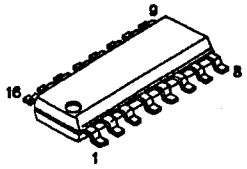


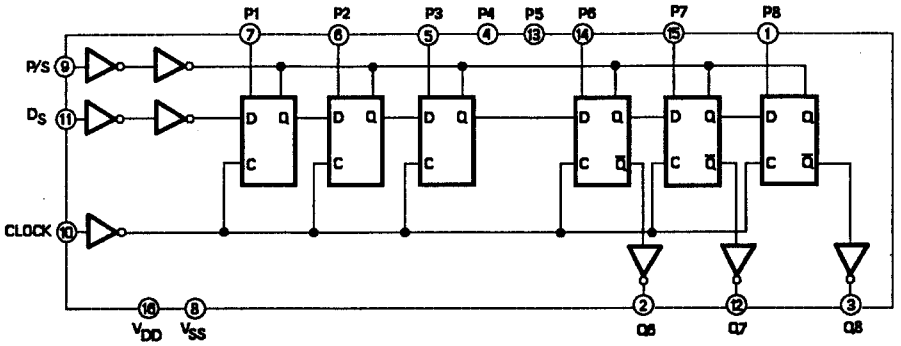
STK3573 : IC211



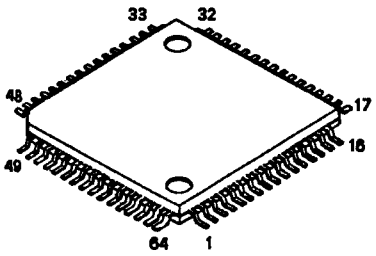


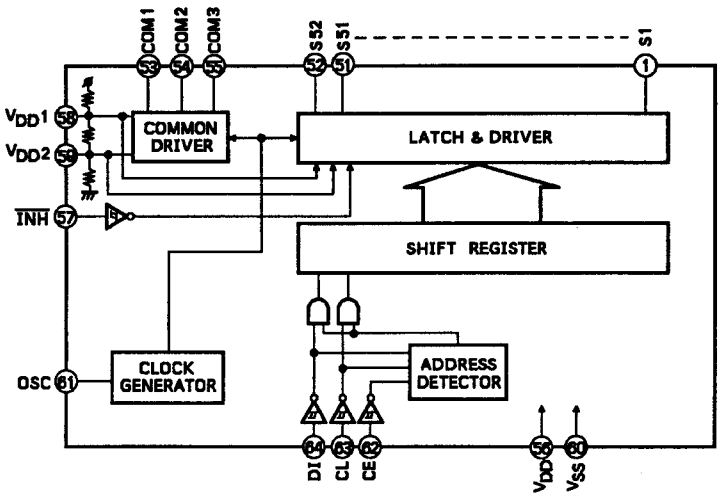
MC14014BFEL : IC401



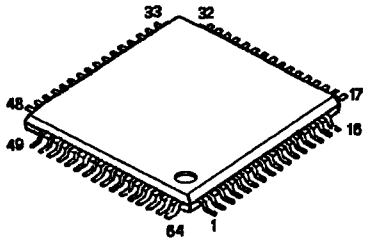


LC75850W : IC402



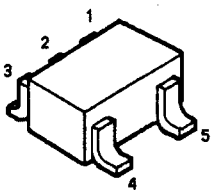


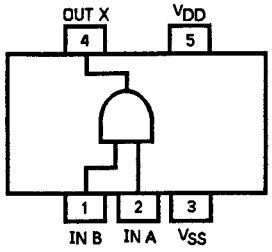
45258W01 : IC501



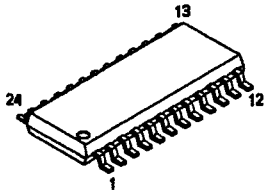
PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O
1	CE1	O	23	AD2	I/O	45	$\overline{SK}$	I
2	NC	—	24	V_{SS}	—	46	SEARCH	I
3	$\overline{DTS-MUTE}$	O	25	AD1	I/O	47	$\overline{MALTI-PATH}$	I
4	$\overline{7073-RESET}$	O	26	AD0	I/O	48	$\overline{ADJON}$	I
5	50K REF	O	27	LE	O	49	S-METER	I
6	$\overline{RESET}$	I	28	DTS-STBY	I	50	$\overline{DK}$	I
7	X2	O	29	RD-CL	I	51	$\overline{RDS}$	I
8	X1	—	30	RD-ST	I	52	PLL-CLK	O
9	V_{SS}	—	31	DATA	I	53	PLL-DO	O
10	SRAM-CE2	O	32	DI	I	54	$\overline{IPF-SW}$	O
11	A14	O	33	A-IN	I	55	IF-MUTE	O
12	NC	—	34	DTS-START	I	56	PLL-CE	O
13	NC	—	35	DTS-CMD	I	57	NC	—
14	NC	—	36	NC	—	58	LW	O
15	A10	O	37	NC	—	59	FM/$\overline{AM}$	O
16	A9	O	38	DTS-CLK	I	60	L/$\overline{D}$	O
17	A8	O	39	DTS-STS	O	61	MONO	O
18	AD7	I/O	40	$\overline{EA}$	I	62	DTS-CE	I
19	AD6	I/O	41	V_{DD}	—	63	SD	I
20	AD5	I/O	42	AV_{SS}	—	64	WR	O
21	AD4	I/O	43	AV_{REF}	I			
22	AD3	I/O	44	$\overline{ST}$	I			

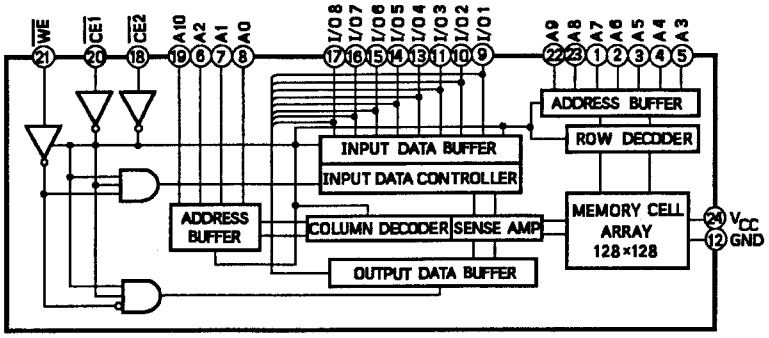
TC4S81F : IC502



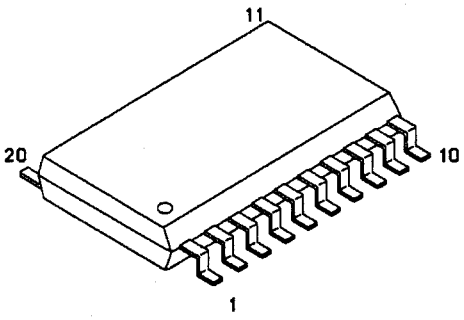


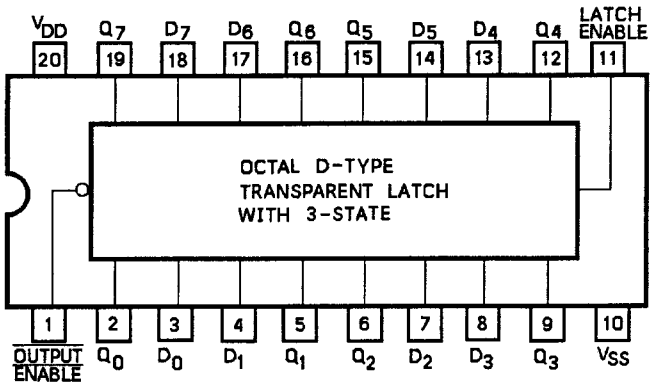
LC3516AML : IC503



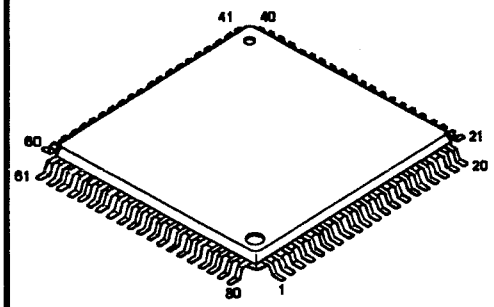


MC74HC373 : IC504



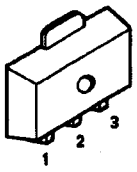


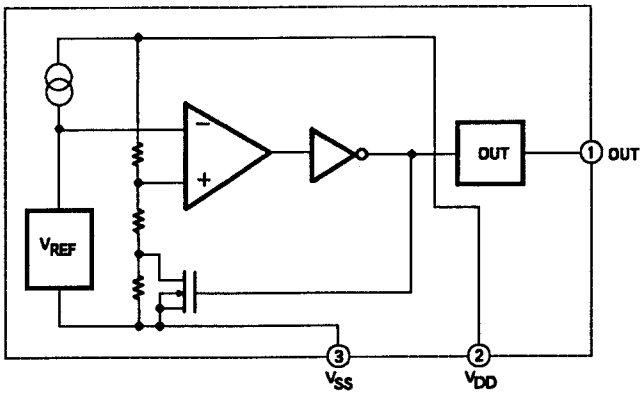
65104W03 : IC601



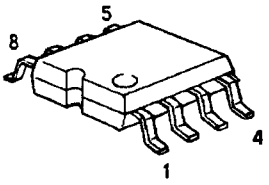
PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O	PIN NO.	CODE ADDRESS	I/O
1	DISC. NO.	I	21	ANTI-LED	O	41	$\overline{\text{TRY OUT}}$	I	61	CCE	O
2	DISC-OK	I	22	BUS-OUT	O	42	$\overline{\text{TRY IN}}$	I	62	LOCK	I
3	AV_{SS}	—	23	P-DOWN	—	43	P-DOWN	—	63	$\overline{\text{LIMIT-SW}}$	I
4	TEST	—	24	POW-ON	O	44	P-DOWN	—	64	DTS-CE	O
5	X2	O	25	NOSE-POW	O	45	P-DOWN	—	65	$\overline{\text{DTS-SCK}}$	O
6	X1	I	26	ABM/$\overline{\text{GRE}}$	O	46	P-DOWN	—	66	DTS-STS	I
7	GND	—	27	LCD-ON	O	47	LOAD.M−	O	67	DTS-CMD	O
8	OSC 1	I	28	OUT-REM	O	48	LOAD.M+	O	68	LCD-CLK	O
9	OSC 2	O	29	F-CONT	O	49	ELV.M−	O	69	LCD-CE	O
10	$\overline{\text{RESET}}$	I	30	A-MUTE	O	50	ELV. M+	O	70	LCD-DATA	O
11	A-HOLD	I	31	SOURCE 1	O	51	TRY.M−	O	71	$\overline{\text{LCD-INH}}$	O
12	B-HOLD	I	32	SOURCE 2	O	52	TRY. M+	O	72	DTS-START	O
13	CHAG-D-1	I	33	P-DOWN	—	53	L-CONT	O	73	DTS-STBY	O
14	EEP SDA	I/O	34	P-DOWN	—	54	V-CONT	O	74	AV_{CC}	—
15	$\overline{\text{IN-INT}}$	I	35	VOL-CLK	O	55	V_{CC}	—	75	T-SENS	I
16	TP-ALM	O	36	VOL-DATA	O	56	BUS 0	I/O	76	NOSE	I
17	KEY-IN	I	37	VOL-INH	O	57	BUS 1	I/O	77	$\overline{\text{DTS-MUTE}}$	I
18	KEY-P/S	O	38	MAG-SW	I	58	BUS 2	I/O	78	DISC-P	I
19	EEP-CLK	O	39	$\overline{\text{LOAD-SW}}$	I	59	BUS 3	I/O	79	KEY-A/D	I
20	IN-PAUSE	I	40	$\overline{\text{HMP-SW}}$	I	60	BUCK	O	80	LOD-END	I

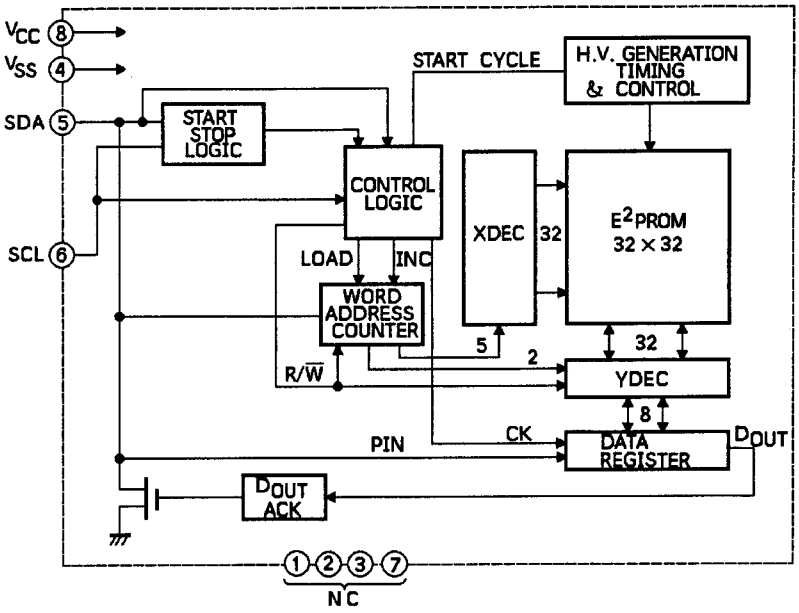
S-8052HNM-CR : IC602
S-8054ALR-LM : IC801



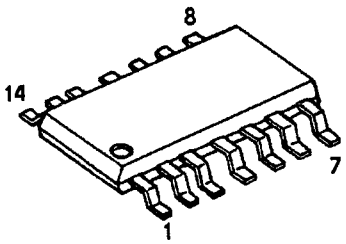


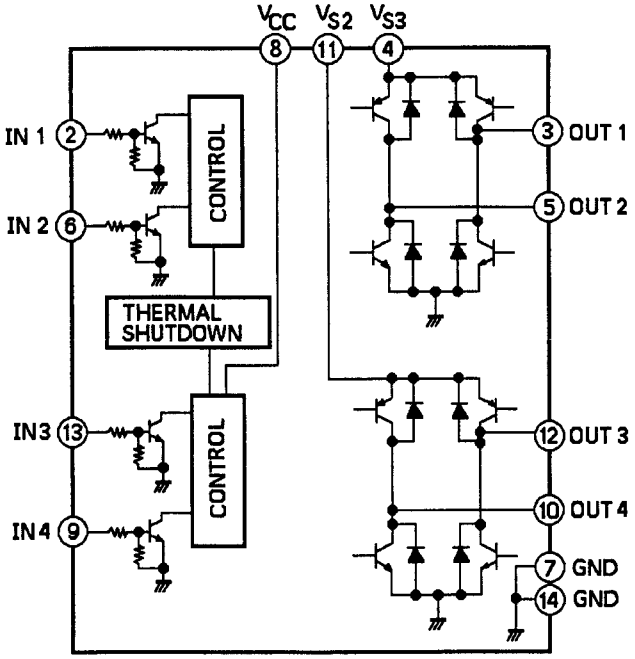
X24LC01SI : IC603



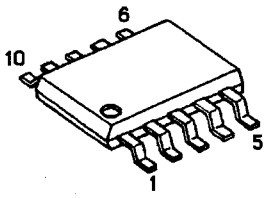


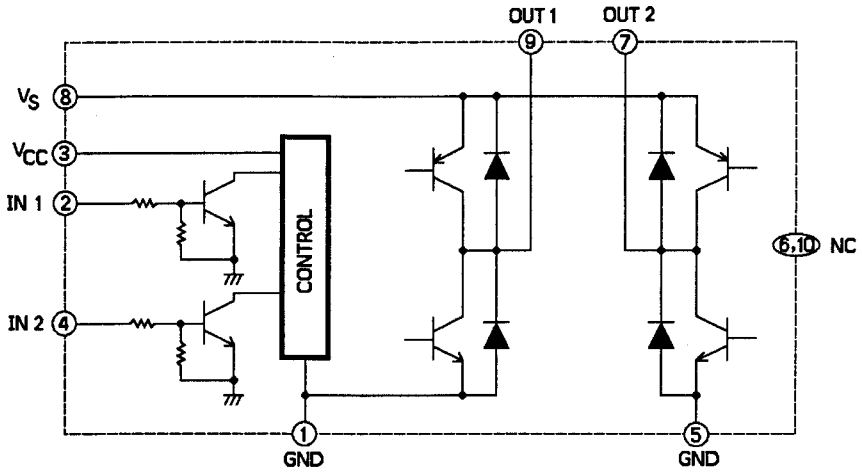
LB1836M : IC701



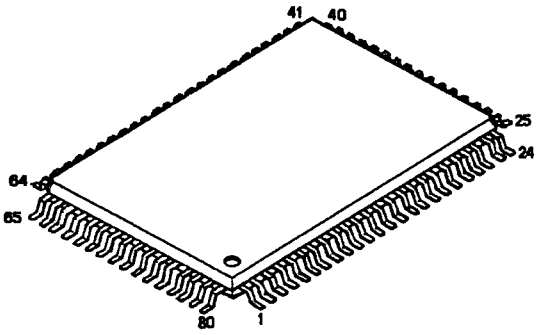


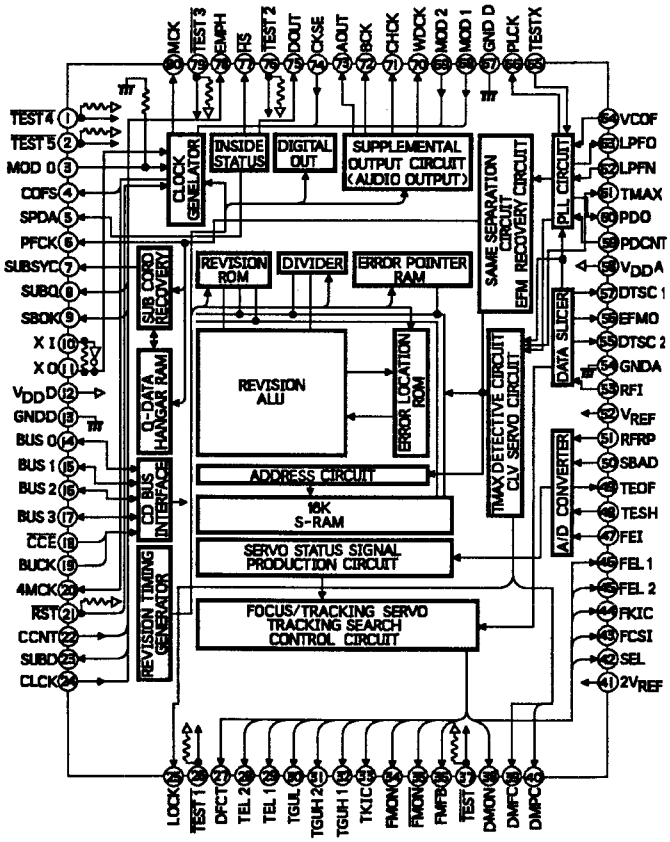
LB1638M : IC702



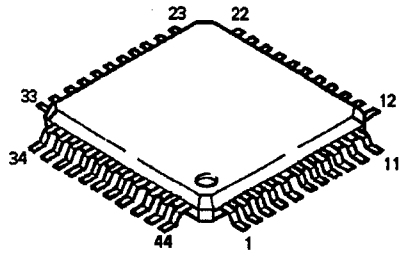


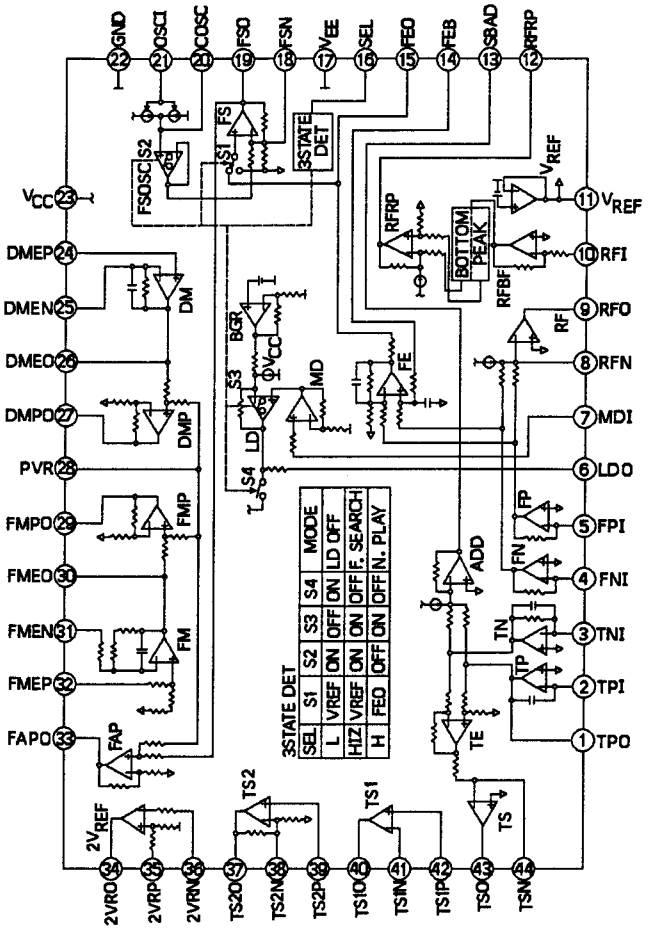
TC9236AF : IC1101 (DS24A020)





TA8191F : IC1102 (DS24A020)





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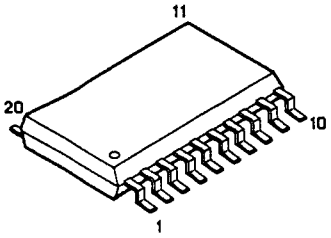
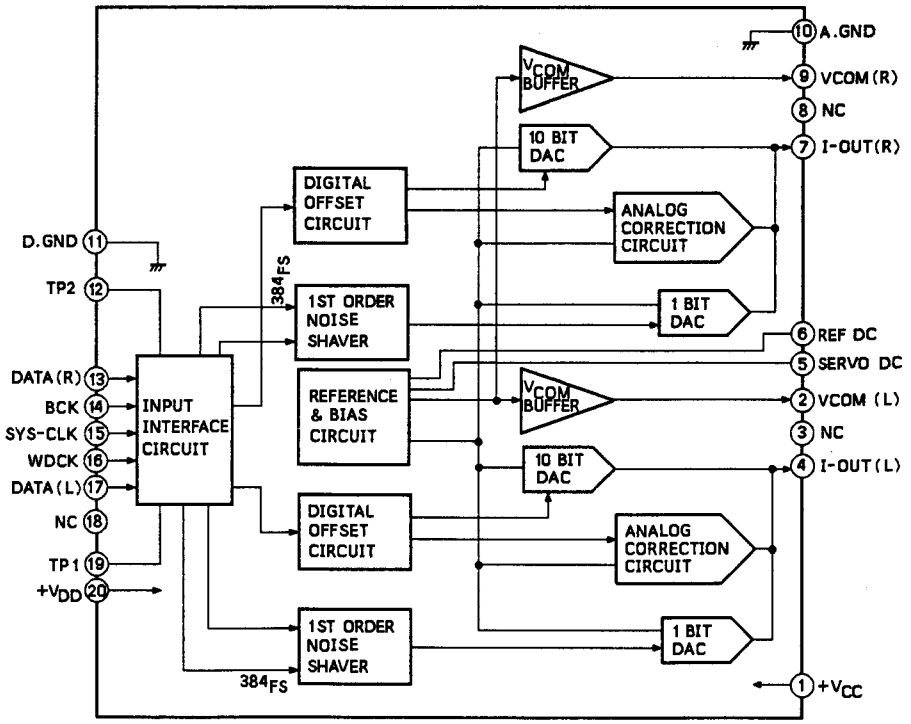
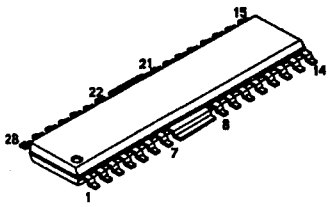
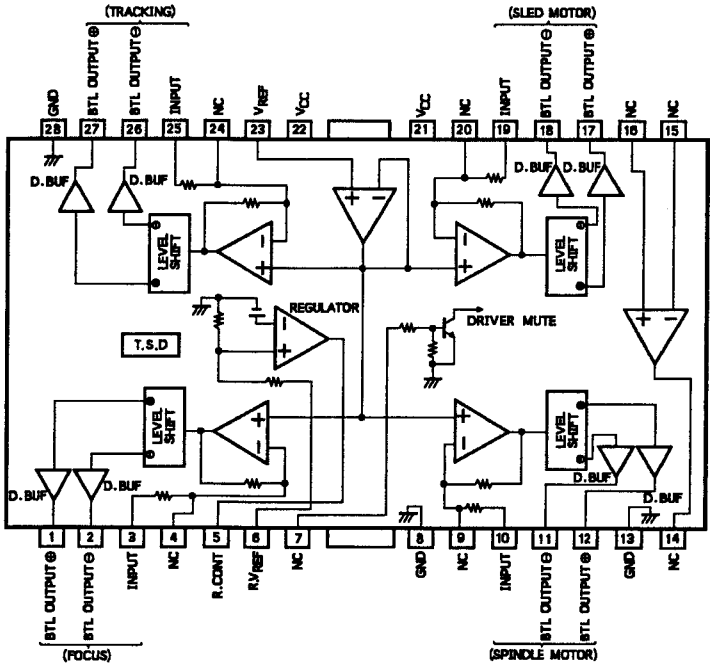




BA6298FP : IC1105 (DS24A020)





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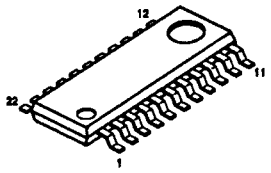

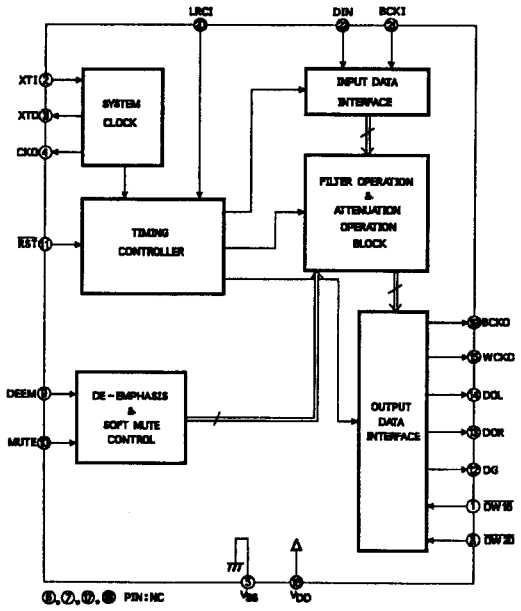

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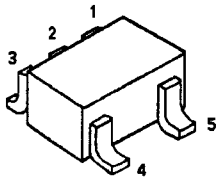

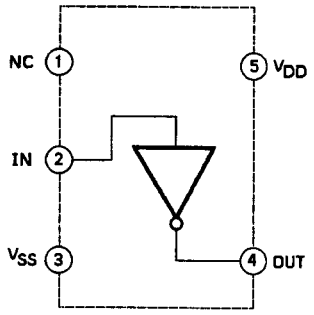

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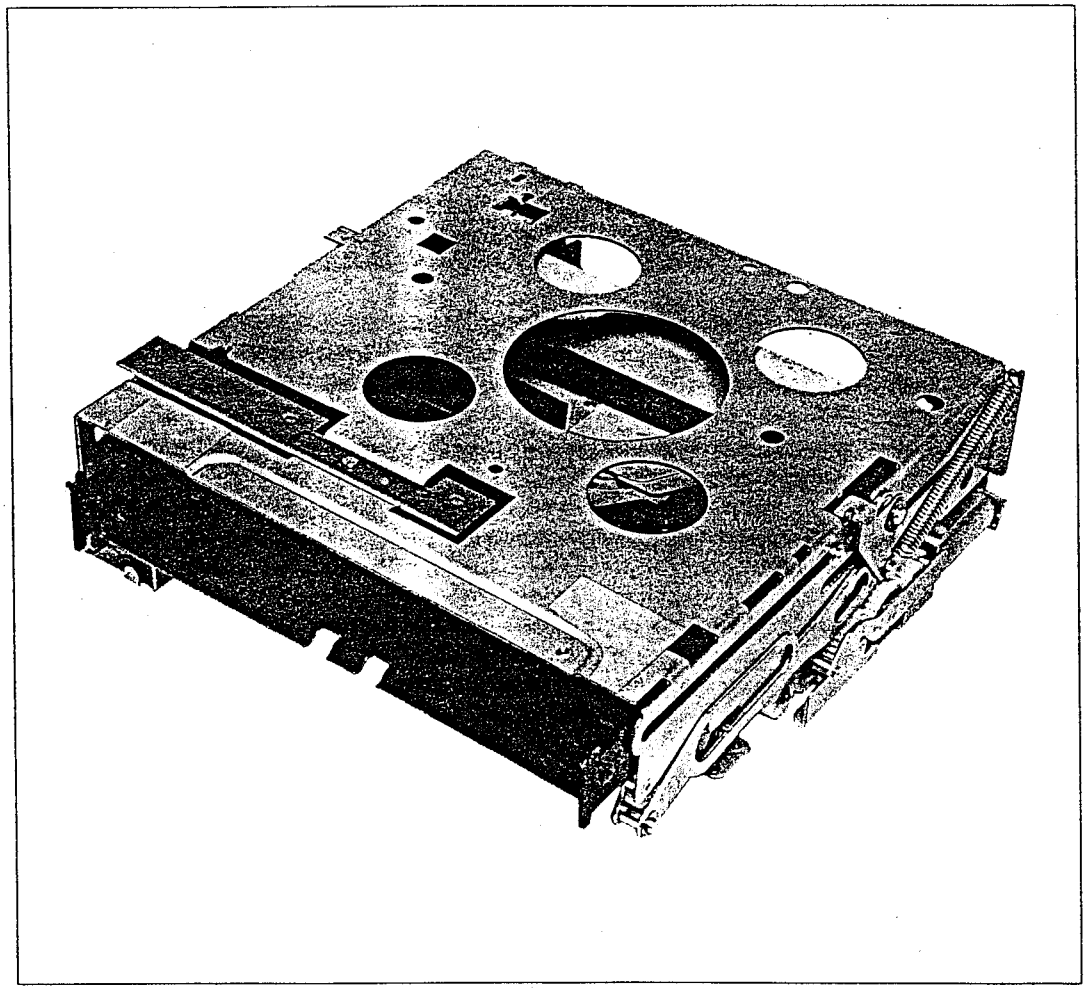
SERVICE MANUAL

In-dash CD Changer Mechanism

3D Shuttle



DS SERIES

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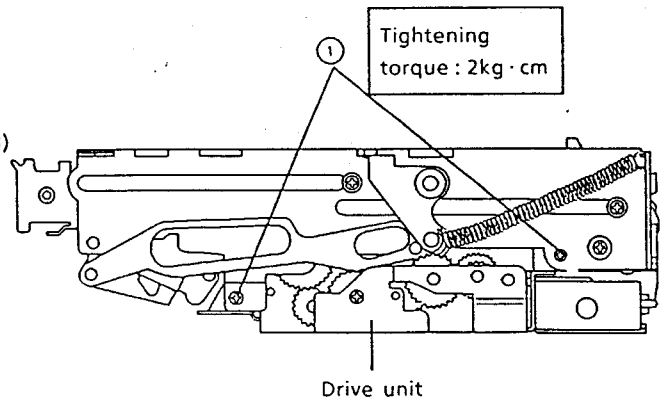
Component disassembly and assembly notes

1. Drive unit disassembly

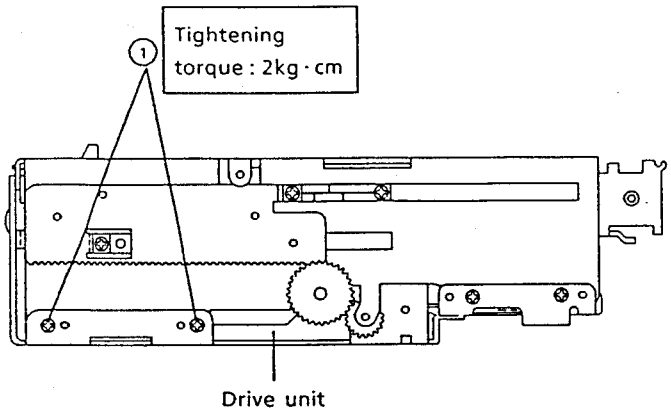
(1) Remove the five screws ① . (See Figures 1, 2, and 3)

<Assembly note>

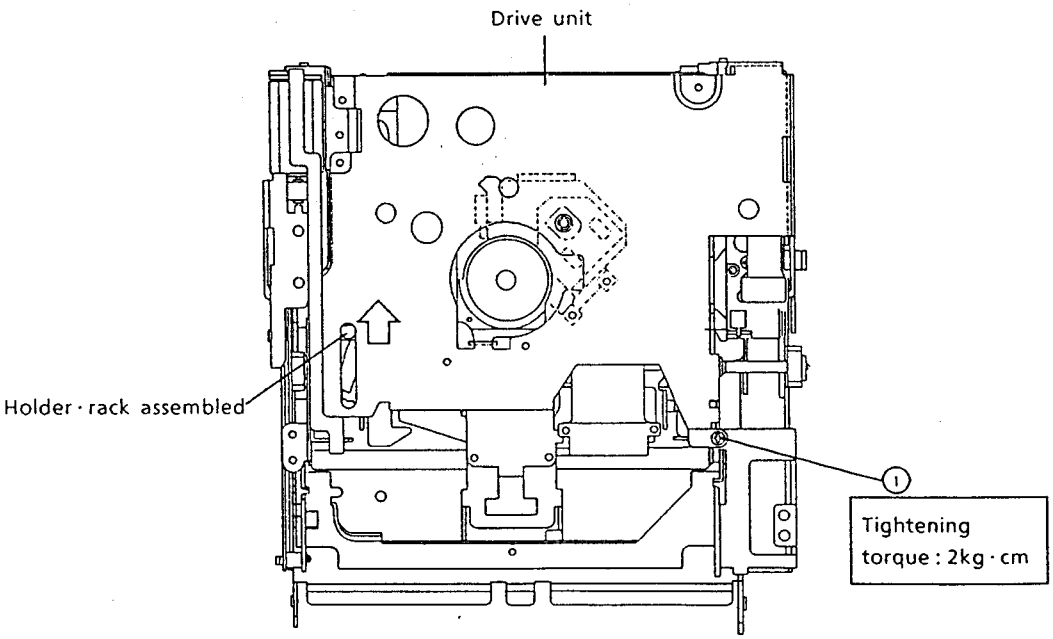
- Move the Holder-rack assembled fully in the direction indicated by the arrow. (See Figure 3)



Right cross section Figure 1



Left cross section Figure 2



Rear cross section Figure 3

2. Tray motor (M103) disassembly

(1) Remove the four springs ②and the three screws ③. Disassemble the Loading tray assembled. (See Figure 4)
(2) Remove the two screws ④. Disassemble the Gear bracket assembled. (See Figure 4)
(3) Remove the two screws ⑤, the Tray motor (M103) can be removed. (See Figure 4)

<Assembly notes>

- When the Gear bracket assembled and Riveting bracket-damper assembled are assembled, move the Riveting holder-rack assembled of the Riveting damper-bracket assembled fully in the direction indicated by the arrow. (See Figure 5)
- Mount the Tray motor (M103) so the label position is correct. (See Figure 4)
- Use the correct springs for mounting the drive unit because the springs ② differ in size. (Spring ②-2 is larger than spring ②-1)

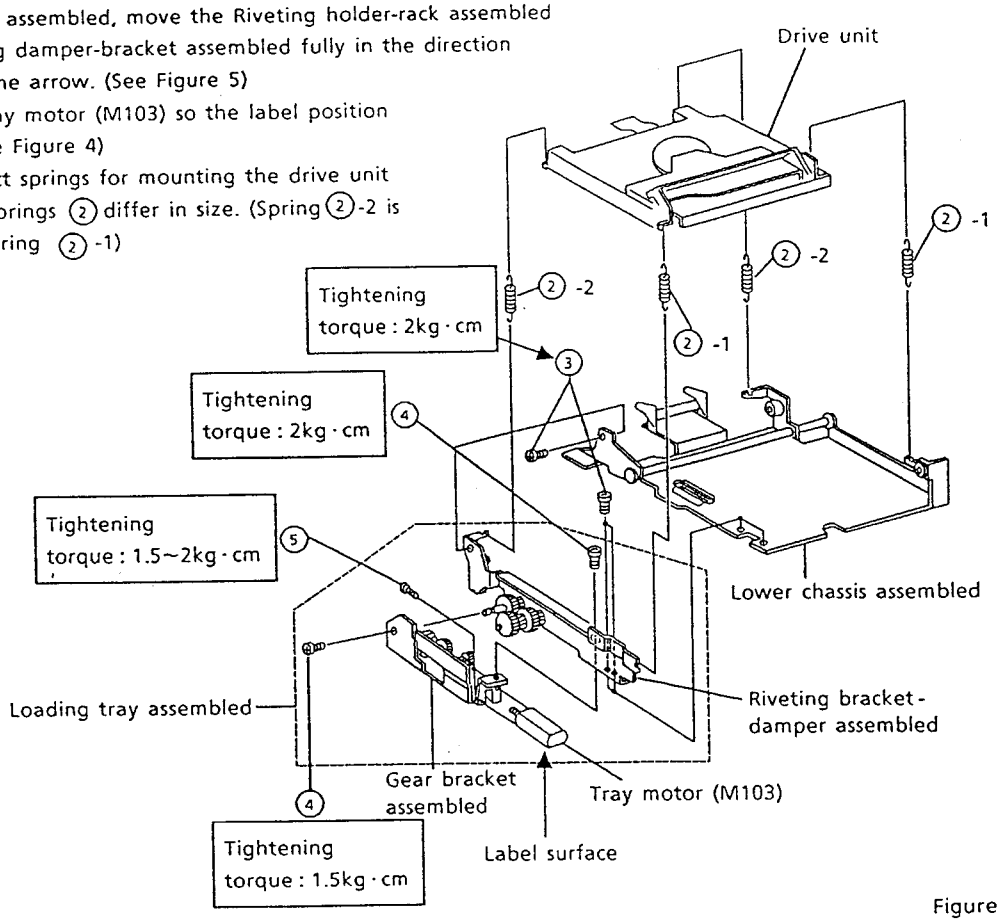


Figure 4

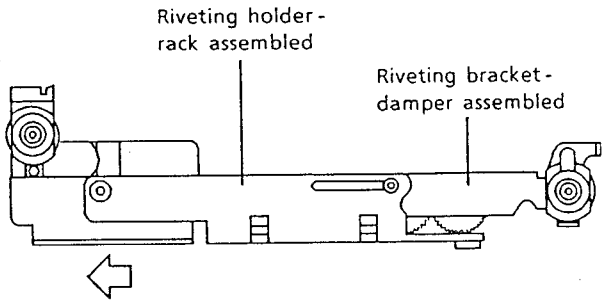


Figure 5

3. CD-LSI P.C.Board disassembly

(1) Before disassembling the CD-LSI P.C.Board, remember to solder point (A) on the Flexible P.C.Board connected to the pick-up unit. (See Figure 6)

(2) Remove the three screws (6) and the connectors connected to the CD-LSI P.C.Board. (See Figure 6) The CD-LSI P.C.Board can be removed.

<Assembly notes>

- The screw (6)-2 type is different from that of the screws (6)-1.
- The solder on the Flexible P.C.Board must be thoroughly removed after inserting the connector into the CD-LSI P.C.Board connector.

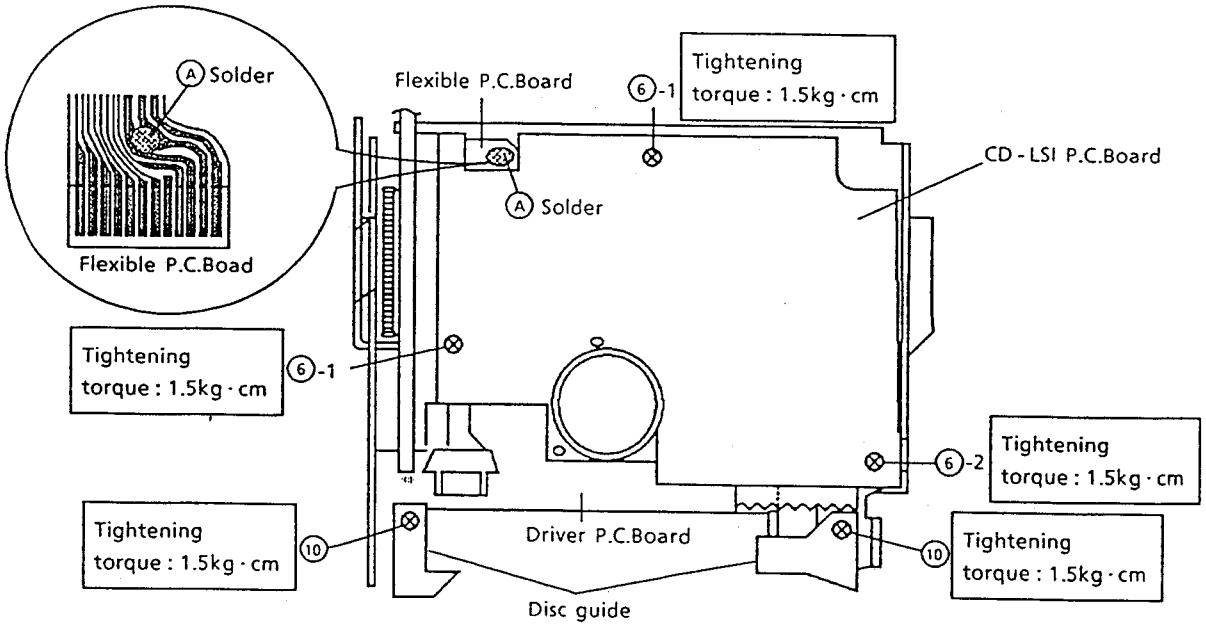


Figure 6

4. Driver P.C.Board disassembly

(1) Remove the two screws (10).
Remove the two Disc guides. (See Figure 6)

(2) Remove all connectors and wires connected to the driver P.C.Baord, the P.C.Baord can be removed.

5. Sled motor (M102) disassembly

(1) Remove the two screw (7) and two wires (blue and red) connected between the Driver P.C.Baord and the Sled motor (M102). (See Figures 7 and 8)

Note : If the sled is pulled too forcibly, the Gear rack will be broken or the Screw shaft will be scratched.

(2) Remove the Bushing, Shaft screws, and the washer (8) (M1.7) to disassemble the Middle gears. (See Figure 8)

(3) Remove the two screws (9). (See Figure 8) The Sled motor (M102) can be removed.

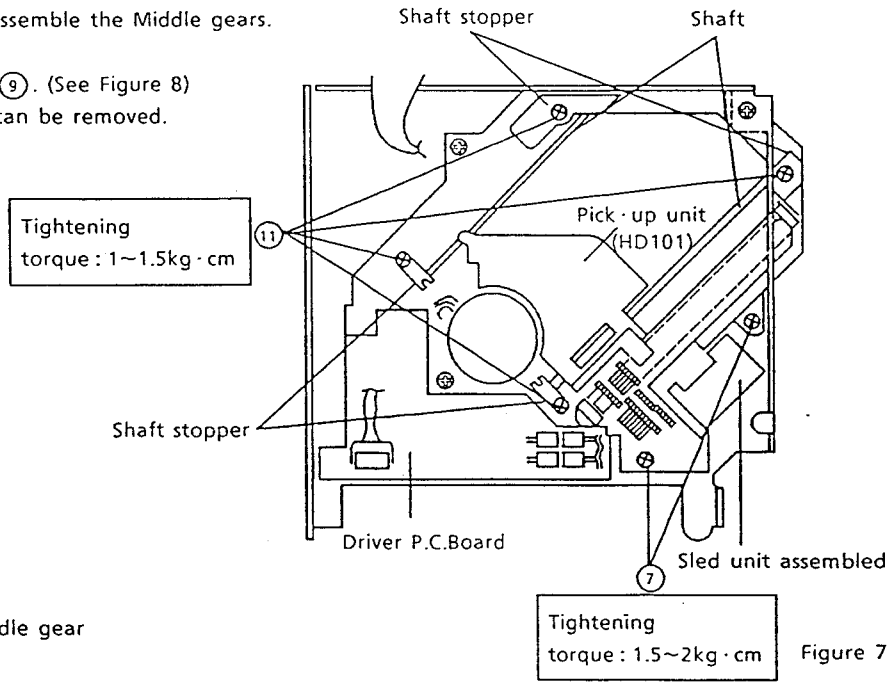


Figure 7

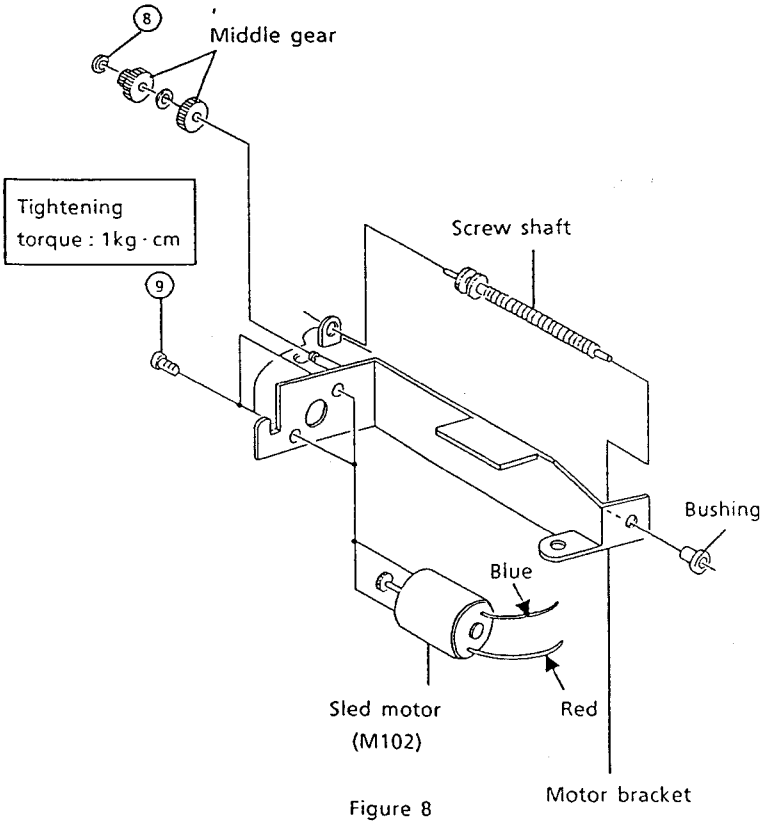


Figure 8

6. Pick-up unit (HD101) disassembly

- Wear an electrostatic discharge band when disassembling the Pick-up unit (HD101). Do not touch the lens or base.

(1) Remove the four screws (11) and four Shaft stoppers. (See Figure 7)
(2) Remove the two Shafts. (See Figure 7)
(3) Remove the two screws (12) and the Gear rack. (See Figure 9)

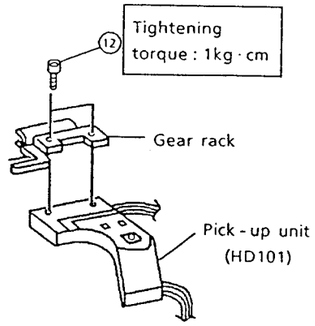
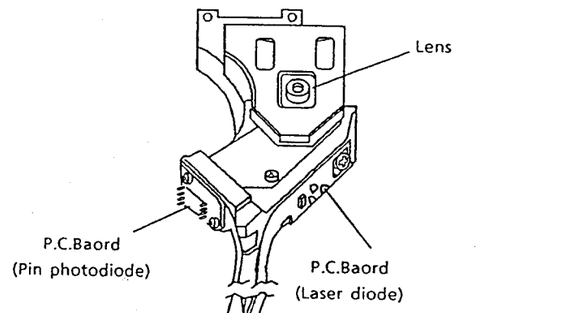


Figure 9

<Assembly notes>

- Always wear an electrostatic discharge band.
- Never touch the Lens of the Pick-up unit or the base. (See Figure 10)
- The Solder on the Flexible P.C.Baord must be thoroughly removed after inserting the connector into the CD-LSI P.C.Board connector. (See Figure 10)
- Form the two Flexible P.C.Board projecting from the Pick-up unit (HD101) as shown in Figure 11.



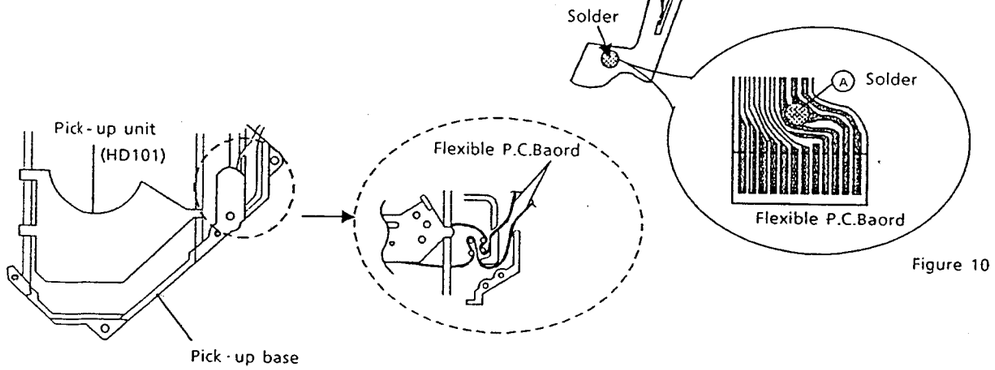


Figure 10

Figure 11

7. Lower roller disassembly

(1) Remove the two screws (13) and the Riveted roller bracket. (See Figure 12)
(2) Remove the washer (14) (M2.6). (See Figure 12)
(3) Straighten the Hook (B) using a pair of pliers. (See Figure 12)
The Lower roller can be removed.

<Assembly note>

- Flatten the Hook (B) with a pair of pliers as shown in Figure 13.

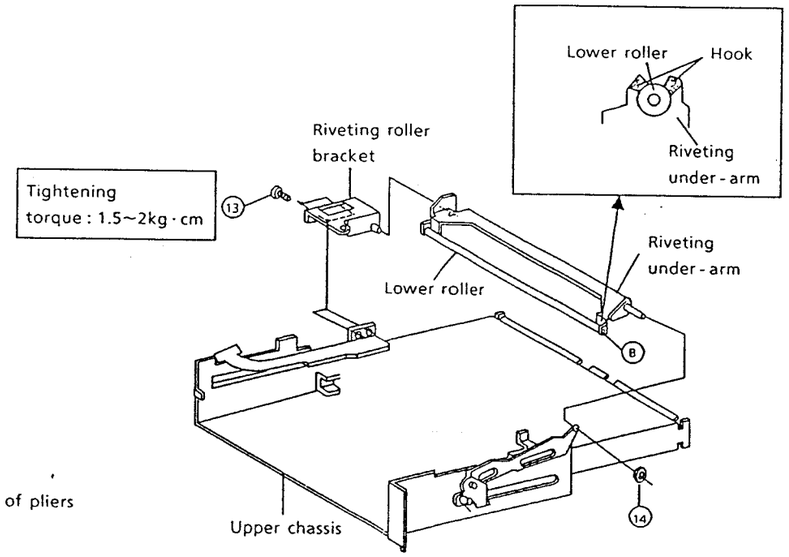


Figure 12

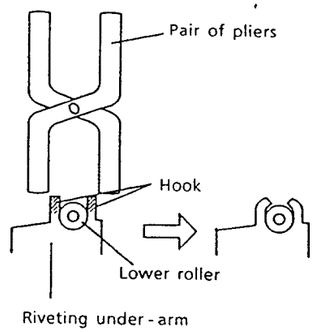
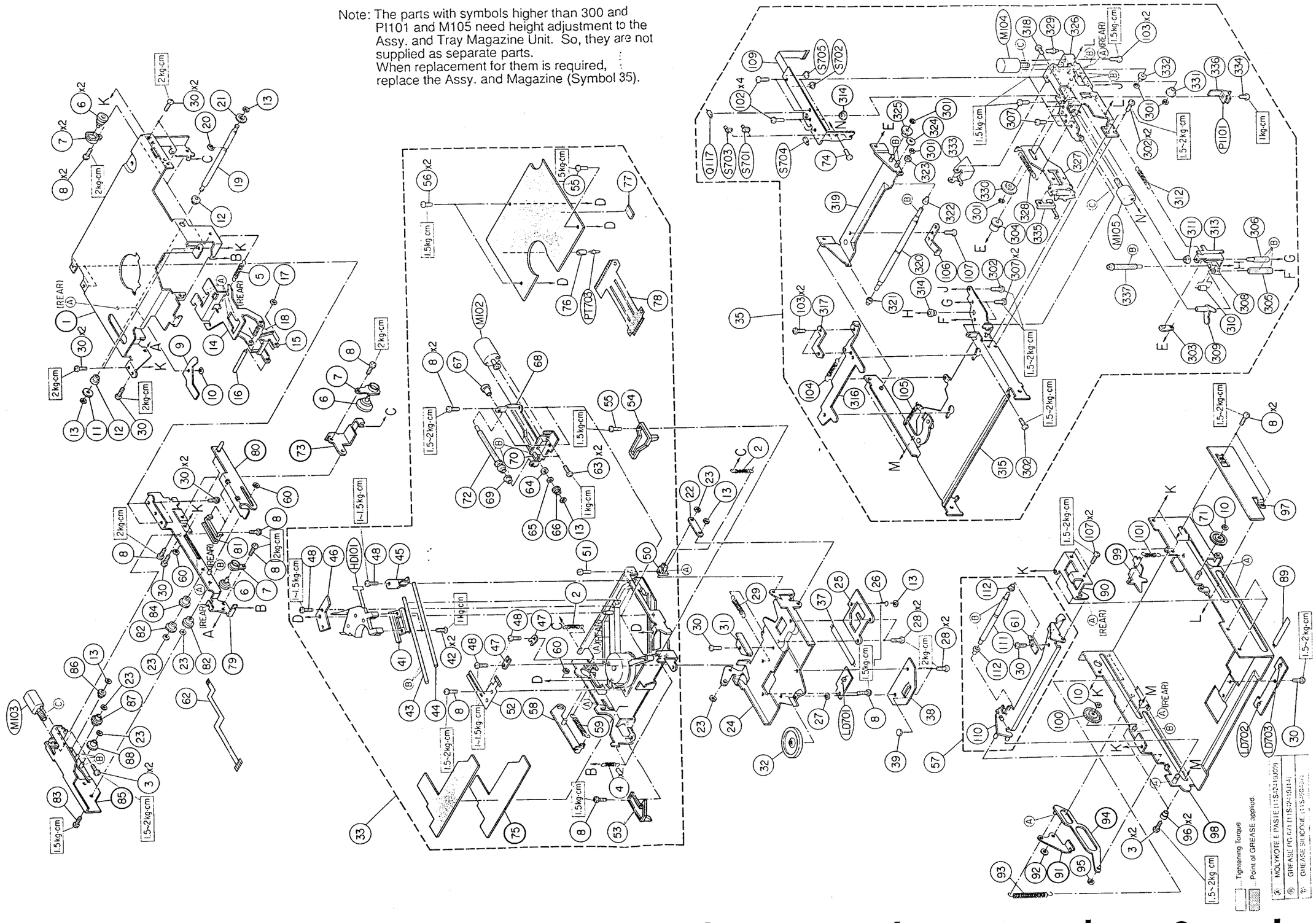


Figure 13

Exploded View (CD Mechanism)

Note: The parts with symbols higher than 300 and PI101 and M105 need height adjustment to the Assy. and Tray Magazine Unit. So, they are not supplied as separate parts.
When replacement for them is required, replace the Assy. and Magazine (Symbol 35).



Cabinet Assembly Parts List (CD Mechanism)

Note : The parts without parts list are not supplied.

Symbol No.	Index	Part No.	Description
2		41B31986W10	Spring, Coil
3		03S94385F09	Screw, Pan (M2×3)
4	5-D	41B31986W09	Spring, Coil
5	2-B	41B31986W07	Spring, Coil
6		75B38085W01	Damper, SDL
7		15A40136W01	Holder, Damper-S
8		03S40014G07	Screw, W/Washer (M2×4)
10		04B41345P22	Washer, Lock (M2.6)
11	3-A	44A31669W01	Gear, Timing
12		43A31617W01	Sleeve, Shaft Timing
13		04B41345P02	Washer, Lock (M1.7)
14	2-B	07C31699W01	Bracket, Locator
15	3-B	01A32057W01	Assy., Riv Disc Guide
16	3-B	47A31658W01	Shaft, Arm
17	2-B	04B41345P01	Washer, Lock (M1.2)
18	2-B	41A32137W01	Spring, Disc Guide
19	2-B	47A31654W01	Shaft, Timing
20	1-B	04C42091G11	Ring "E" (M2.5)
21	1-B	44A31669W01	Gear, Timing
22	3-D	45A31566W01	Link, Clamper
23		04B41345P04	Washer, Lock (M2.6)
24	4-E	01C32060W01	Assy., Riv. Clamper
25	4-E	01A31985W01	Assy., Riv. Spring
26	4-E	47A32014W01	Rod, Lifter
27	4-E	04B41345P06	Washer, Lock (M2.1)
28	4-F	03S94385F06	Screw, Pan (M2×1.8)
29	4-E	41B31986W02	Spring, Coil
30		03S94385F19	Screw, Pan (M2×2.5)
31	4-E	15A11267W01	Holder, Disc
32	5-E	01V41100W41	Assy., Clamper B
33	5-C	01V41100W92	Assy., Drive Unit (Included Spindle Motor (M101))
35	2-E	01V41100W36	Assy., Tray Magazine Unit
37	4-E	30T73687F21	Wire, Parallel 2P
38	4-F	07A31556W01	Bracket, Top
39	5-F	43A41006F06	Spacer, Polyslider
41	4-C	44A31717W01	Rack, Gear
42	4-C	03S94385F21	Screw, Countersink (M1.7×3)
43	4-C	47A31708W01	Shaft, Pickup
44	4-C	47A31708W02	Shaft, Pickup
45	4-C	07A31719W01	Stopper, Shaft (B)

Symbol No.	Index	Part No.	Description
46	4-C	07A31720W01	Stopper, Shaft (C)
47		07A31721W01	Stopper, Shaft (D)
48		03S70494F14	Screw, Pan (M1.7×4)
50	4-D	01A32068W01	Assy., Riv. Bracket Damper
51	4-D	03S40014G61	Screw, W/Washer (M2×5)
52	4-C	07A41531W01	Spring, GND
53	5-D	15A31680W01	Guide, Disc R
54	3-D	15A31681W01	Guide, Disc L
55		03S94385F18	Screw, Pan (M2×3.5)
56	2-C	03S70494F15	Screw, Pan (M2×4)
57	5-F	01V41100W32	Assy., Bracket Roll Under
58	4-D	01B31975W01	Assy., Riv. Clamper C
59	4-D	41B31986W03	Spring, Coil
60		04B41345P19	Washer, Lock (M1.7)
61	4-F	41A41640W01	Spring, Roller
62	4-B	84D31161W01	FPC Tray Motor P.C.Board
63	3-D	03S94385F30	Screw, Pan (M1.6×2.8)
64	3-D	44A32062W01	Gear, Middle (A)
65	3-D	04S40075G05	Washer, Polyslider (M2.1)
66	3-D	44A32063W01	Gear, Middle (B)
67	3-C	43A40068W01	Bushing, Screw
68	3-D	07B31714W01	Bracket, Motor
69	3-C	43A40144W01	Bushing, Stopper
70	3-C	46A32065W01	Stud, Middle
71	3-G	44A31670W01	Gear, Idler
72	3-C	01V41200W25	Assy., Shaft Screw
74	2-E	03S70494F18	Screw, Pan (M1.7×2)
76	2-D	43A40834W01	Base, Photo
77	2-D	14S71058F40	Insulator, Cover
78	2-D	84B32020W01	FPC CD-LSI P.C.Board
81	4-B	44A31662W01	Rack
82	4-B	44A31672W01	Gear, Drive
83	5-A	03S94385F02	Screw, Pan (M1.7×3)
84	4-B	44A40752W01	Gear, Drive B
86	4-A	44A31666W01	Worm, Wheel Tray
87	4-A	44A31668W01	Gear, Drive A
88	5-A	44A31672W01	Gear, Drive
89	4-H	30T73687F22	Wire, Parallel 3P
92	5-F	04B41345P05	Washer, Lock (M3.5)
93	5-F	41B31986W06	Spring, Coil
95	5-F	04B41345P04	Washer, Lock (M2.6)
96	5-G	43A31619W01	Sleeve
97	3-H	44A31661W01	Rack, Tray
100	4-F	44A31670W01	Gear, Idler
101	3-G	41B31986W04	Spring, Coil

Symbol No.	Index	Part No.	Description
102	2-E	03S94385F08	Screw, Pan (M2 x 3)
103		03S94385F28	Screw, Pan (M1.7 x 2)
104	3-E	41B31986W05	Spring, Coil
105	3-F	41B31986W02	Spring, Coil
106	2-F	41A40795W01	Spring, Stopper
107		03S94385F07	Screw, Pan (M2 x 2)
109	1-E	84T45565W01	FPC Motor & Sensor P.C.Board
110	4-F	01B31982W01	Assy., Riv. Arm R Under
111	4-F	01A41424W01	Assy., Shaft R Under
112	4-F	43A31615W01	Sleeve, Shaft Roll

Symbol No.	Part No.	Description
	Miscellaneous	
HD101	88T35580W01	Pickup, Unit
LD701	48T16057W02	LED, AN501 (RED)
LD702	48T16057W01	LED, AN501 (RED)
LD703	48T16057W01	LED, AN501 (RED)
M102	01V41200W24	Assy., Sled Motor (3.5V-200mA)
M103	01V14400W40	Assy., Tray Motor (6V-260mA)
M104	01V41100W38	Assy., Loading Motor (7V-260mA)
PT703	48T35506W01	Transistor, Photo PS3062
Q117	48T63420F04	Transistor, Chip 2SA1037K
S701	40T15222W01	Switch, Detector (LOADING)
S702	40T15222W01	Switch, Detector (HMP)
S703	40T25956W01	Switch, Detector (MAGAZINE)
S704	40T35543W02	Switch, Detector (TRAY OUT)
S705	40T15222W01	Switch, Detector (TRAY IN)

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SERVICE MANUAL

In-dash CD Changer Mechanism

3D Shuttle

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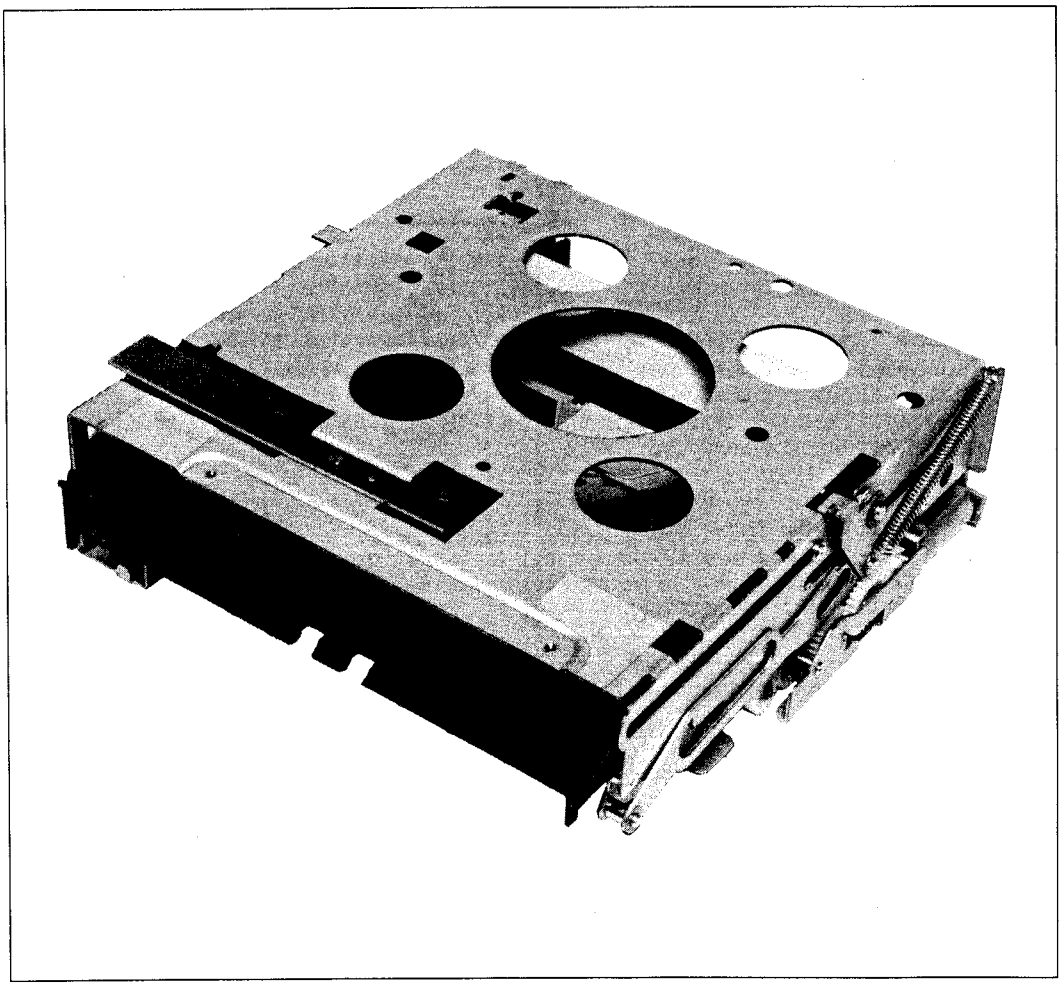
ADDENDUM & REVISED



DS SERIES

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CD Mechanism Assembly Parts List 2

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CD Mechanism Assembly Parts List

Note : The parts is not mentioned, refer to the Service Manual DS Series (68P50238W01).

	Symbol No.	Index	Part No.	Description
	5	2-B	41B31986W12	Spring, Coil
	27	4-E	04B41345P24	Washer, Lock (M2.1)
○	33	5-C	01V41100W92	Assy., Driver Unit
□	33	5-C	01V41100W92	Assy., Driver Unit
△	33	5-C	01V53800W55	Assy., Driver Unit
○	35	2-E	01V41100W33	Assy., Chassis Top (A)
□	35	2-E	01V41100W33	Assy., Chassis Top (A)
△	35	2-E	01V63100W01	Assy., Chassis Top (A)
	51	4-D	03S40014G02	Screw, W/Washer (M2×6)
○	86	4-A	44A31666W01	Worm, Wheel Tray
□	86	4-A	44A31666W01	Worm, Wheel Tray
△	86	4-A	44A60134W01	Worm, Wheel Tray
	103	2-E	03S94385F28	Screw, Pan (M1.7×2)
	105	3-F	41B31986W13	Spring, Coil
	118	1-G	03S94385F42	Screw, Pan (M1.7×2.5)
	120		03S94385F41	Screw, Pan (M2×2.5)
	122	2-A	03S40014G82	Screw, W/Washer (M2×3.5)
	123		41A11480W01	Spring
	124		04B41345P23	Washer, Lock (M1.7)
	125		04S40075G09	Washer, Polyslider (M2×5)
	126	4-C	03D40121T38	Screw, W/Double Washer (M2×5)
	127		84T45446W01	FPC LED (1) P.C.Board

	Symbol No.	Part No.	Description
		Miscellaneous	
○	M103	01V14400W40	Assy., Tray Motor (6V-260mA)
□	M103	01V14400W40	Assy., Tray Motor (6V-260mA)
△	M103	01V61900W99	Assy., Tray Motor (6V-260mA)
○	M104	01V41100W38	Assy., Loading Motor (7V-260mA)
□	M104	01V41100W38	Assy., Loading Motor (7V-260mA)
△	M104	01V63100W04	Assy., Loading Motor (7V-260mA)

Notes : ○ : DS24A010 Model Only, □ : DS24A01A Model Only,
△ : DS24A020 Model Only, Others : Common.

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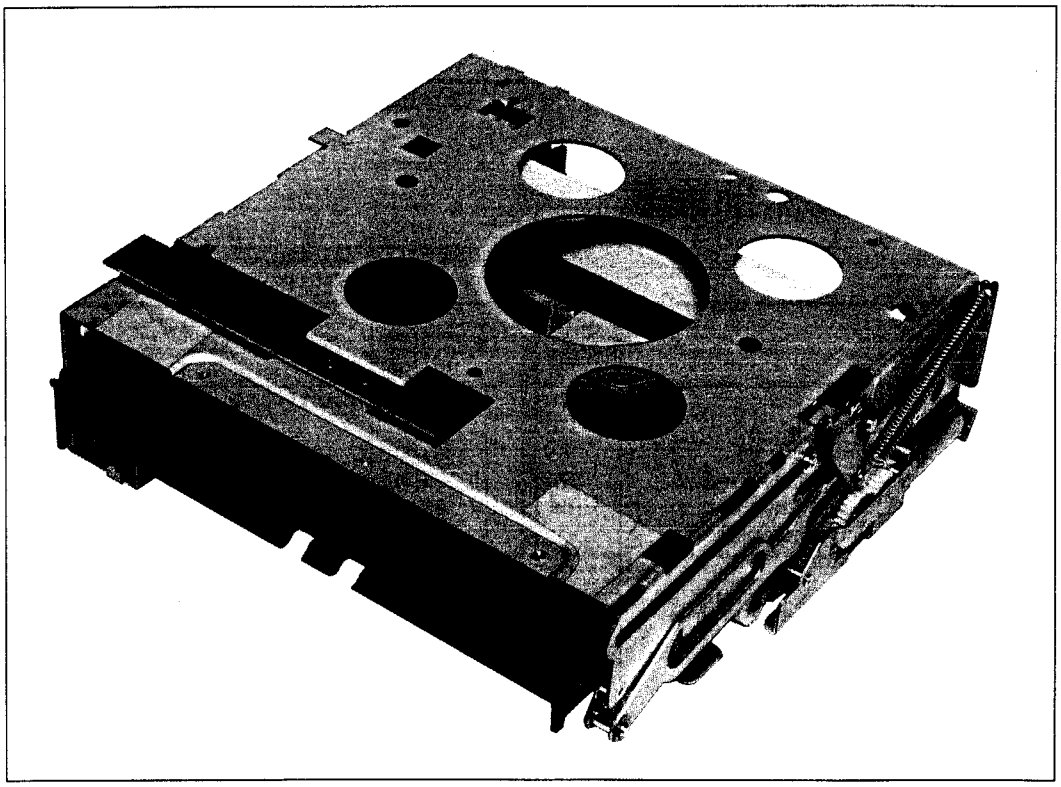
SERVICE MANUAL

In-dash CD Changer Mechanism

3D Shuttle

ADDENDUM & REVISED (III)

- This manual is described on DS24A03A/040 only. The DS24A03A/040 is developed from DS24A010. For information that is not mentioned in this service manual, refer to the Service Manual • DS Series-ADDENDUM & REVISED (68P50238W02).
- 当マニュアルは DS24A03A/040 についてのみ記載しております。又、DS24A010がベースモデルとなっておりますので、相違部分のみ記載されております。詳細についてはDSシリーズ (追補／改訂版) (68P41901W02) を参照願います。



DS SERIES

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CD Mechanism Assembly Parts List

NOTE : The parts is not mentioned, refer to the Service Manual · DS Series (68P50238W02).

Symbol No.	Index	Part No.	Description
11	3-A	44A80102W01	Gear, Timing
21	1-B	44A80102W01	Gear, Timing
22	3-D	45A61361W01	Link, Clamper
32	5-E	01V64500W91	Assy., Clamper B
○ 33	5-C	01V81200W22	Assy., Drive Unit (Included Spindle Motor (M101))
□ 33	5-C	01V41100W92	Assy., Drive Unit (Included Spindle Motor (M101))
○ 35	2-E	01V64500W86	Assy., Chassis Top (A)
□ 35	2-E	01V63100W01	Assy., Chassis Top (A)
38	4-F	07A61360W01	Bracket, Top
39	5-E	43A60884W01	Spacer
40	2-E	01V41100W46	Assy., Bracket Roll Upper
45	4-C	07A61362W01	Stopper, Shaft (B)
46	4-B	07A61363W01	Stopper, Shaft (C)
47	4-C	07A61364W01	Stopper, Shaft (D)
50	4-D	01A61354W01	Assy., Riv. Bracket Damper
52	4-C	07A61365W01	Spring, GND
71	3-G	44A80103W01	Gear, Idler
86	4-A	44A60134W01	Worm, Wheel Tray
100	4-F	44A80103W01	Gear, Idler
129	4-B	44A80104W01	Gear, Drive
130	4-F	41A41640W01	Spring, Roller

Miscellaneous

LD701		48T16057W04	LED, AN501-B1 (RED)
○ PT703		48T35506W04	Transistor, Photo PS3062
□ PT703		48T35506W02	Transistor, Photo PS3062
M103		01V61900W99	Assy., Tray Motor (6V-260mA)
M104		01V63100W04	Assy., Loading Motor (7V-260mA)

NOTE : ○ : For DS24A03A Model Only, □ : For DS24A040 Model Only, Others : Common.

CDメカニズム関係部品表

※ 記載されていない部品については、サービスマニュアル · DS シリーズ (68P41901W02) を参照願います。

記号	索引	部品番号	部品名	標準卸価格
11	3-A	44A80102W01	Gear, Timing	70
21	1-B	44A80102W01	Gear, Timing	70
22	3-D	45A61361W01	Link, Clamper	55
32	5-E	01V64500W91	Assy., Clamper B	570
○ 33	5-C	01V81200W22	Assy., Drive Unit (Included Spindle Motor (M101))	---
□ 33	5-C	01V41100W92	Assy., Drive Unit (Included Spindle Motor (M101))	7,630
○ 35	2-E	01V64500W86	Assy., Chassis Top (A)	4,190
□ 35	2-E	01V63100W01	Assy., Chassis Top (A)	4,580
38	4-F	07A61360W01	Bracket, Top	65
39	5-E	43A60884W01	Spacer	45
40	2-E	01V41100W46	Assy., Bracket Roll Upper	1,230
45	4-C	07A61362W01	Stopper, Shaft (B)	110
46	4-B	07A61363W01	Stopper, Shaft (C)	80
47	4-C	07A61364W01	Stopper, Shaft (D)	45
50	4-D	01A61354W01	Assy., Riv. Bracket Damper	200
52	4-C	07A61365W01	Spring, GND	80
71	3-G	44A80103W01	Gear, Idler	80
86	3-A	44A60134W01	Worm, Wheel Tray	45
100	4-F	44A80103W01	Gear, Idler	80
129	4-B	44A80104W01	Gear, Drive	115
130	4-F	41A41640W01	Spring, Roller	210

その他の電気部品

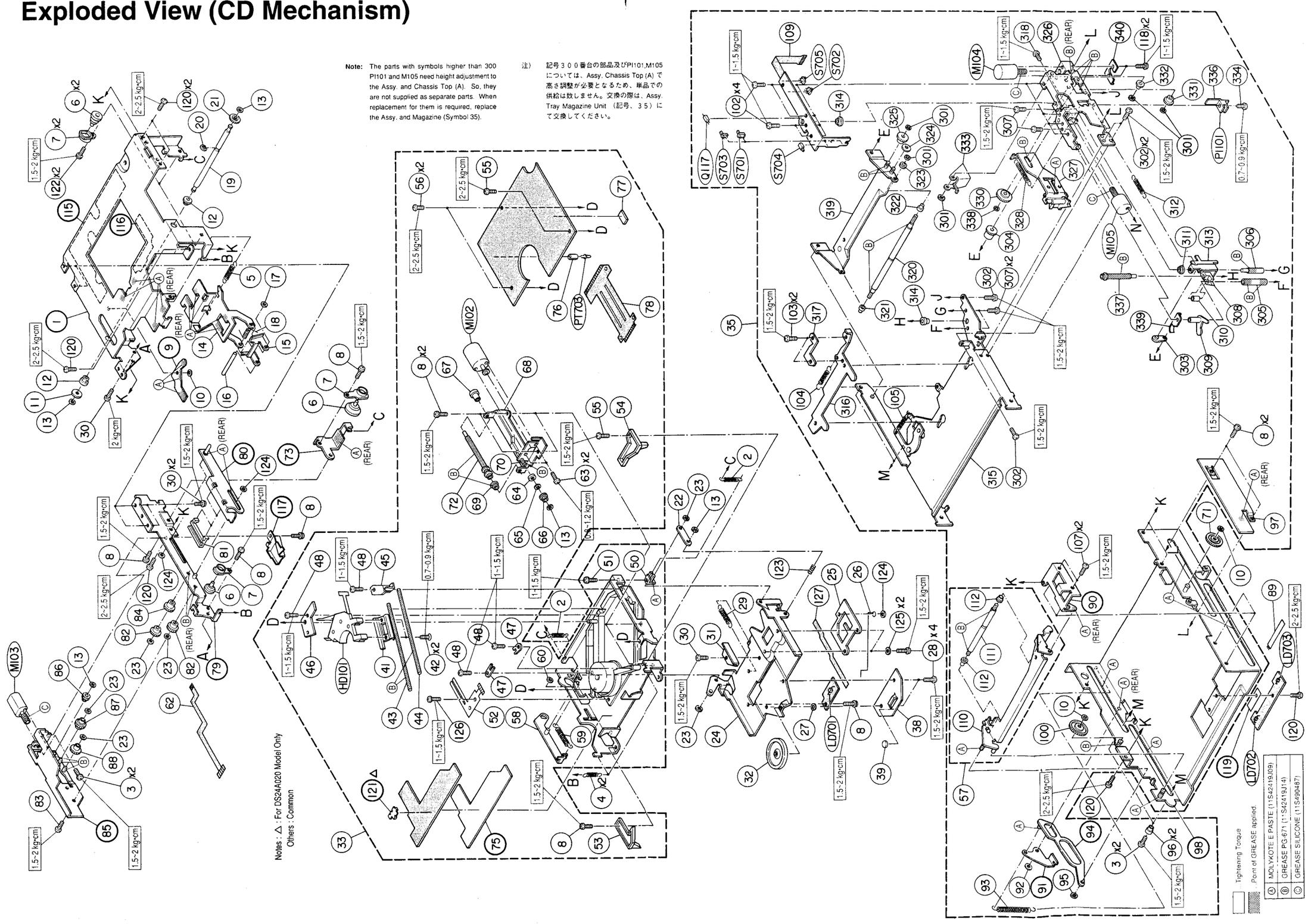
LD701		48T16057W04	LED, AN501-B1 (RED)	160
○ PT703		48T35506W04	Transistor, Photo PS3062	230
□ PT703		48T35506W02	Transistor, Photo PS3062	170
M103		01V61900W99	Assy., Tray Motor (6V-260mA)	900
M104		01V63100W04	Assy., Loading Motor (7V-260mA)	1,260

[注記] : ○ : DS24A03A モデル専用, □ : DS24A040 モデル専用, その他 : 共通

Exploded View (CD Mechanism)

Note: The parts with symbols higher than 300 PI101 and M105 need height adjustment to the Assy. and Chassis Top (A). So, they are not supplied as separate parts. When replacement for them is required, replace the Assy. and Magazine (Symbol 35).

注） 記号３００番台の部品及びPI101,M105については、Assy. Chassis Top (A) で高さ調整が必要となるため、単品での供給は致しません。交換の際は、Assy. Tray Magazine Unit （記号、３５）にて交換してください。


Notes : △ : For DS24A020 Model Only
Others : Common
Tightening Torque
Point of GREASE applied
(A) MOLYKOTE E-PASTE (11S42419J09)
(B) GREASE PG-671 (11S42419J14)
(C) GREASE SILICONE (11S490487)

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SERVICE MANUAL

In-dash CD Changer Mechanism

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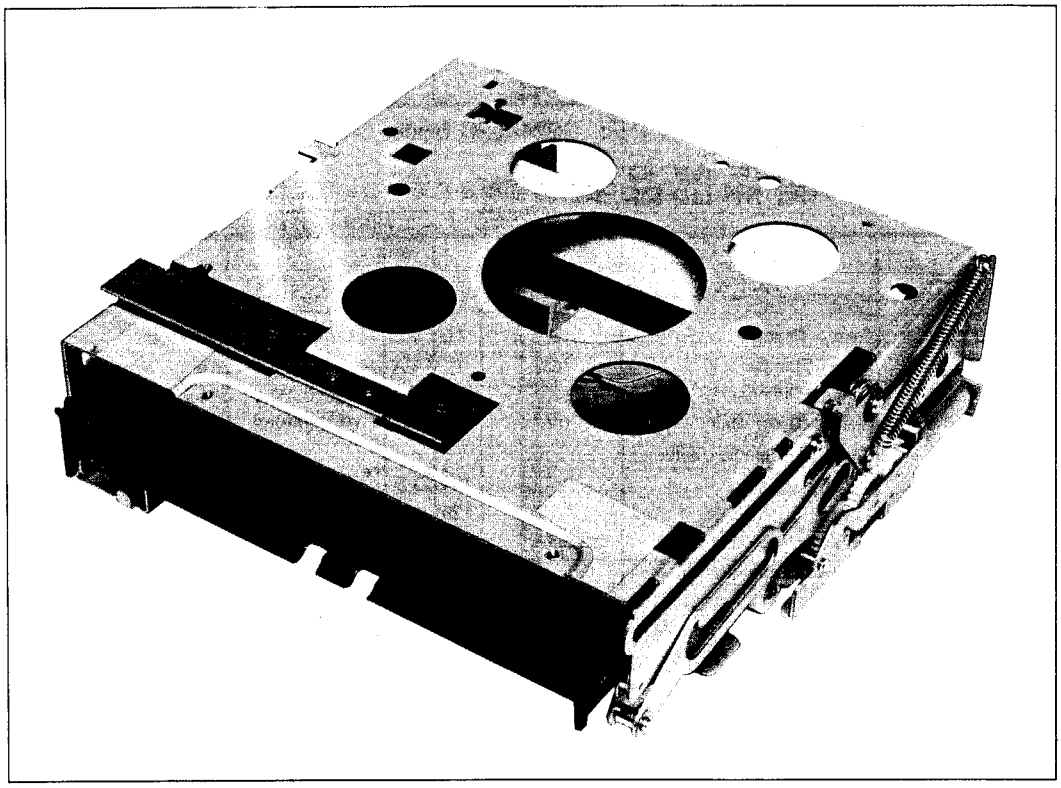
ADDENDUM & REVISED (IV)

- This manual is described on DS24A03B/03C only. The DS24A03B/03C is developed from DS24A010. For information that is not mentioned in this service manual, refer to the Service Manual • DS Series-ADDENDUM & REVISED (68P50238W02).
- 当マニュアルは DS24A03B/03C についてのみ記載しております。又、DS24A010がベースモデルとなっておりますので、相違部分のみ記載されております。詳細についてはDSシリーズ (追補／改訂版) (68P41901W02) を参照願います。



DS SERIES

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CD Mechanism Assembly Parts List

NOTE : The parts is not mentioned, refer to the Service Manual • DS Series (68P50238W02).

Symbol No.	Index	Part No.	Description
11	3-A	44A80102W01	Gear, Timing
21	1-B	44A80102W01	Gear, Timing
22	3-D	45A61361W01	Link, Clamper
32	5-E	01V64500W91	Assy., Clamper B
○ 33	5-C	01V86200W71	Assy., Drive Unit (Included Spindle Motor (M101))
□ 33	5-C	01V81200W22	Assy., Drive Unit (Included Spindle Motor (M101))
○ 35	2-E	01V64500W86	Assy., Chassis Top (A)
□ 35	2-E	01V88400W78	Assy., Chassis Top (A)
38	4-F	07A61360W01	Bracket, Top
39	5-E	43A60884W01	Spacer
40	2-E	01V41100W46	Assy., Bracket Roll Upper
45	4-C	07A61362W01	Stopper, Shaft (B)
46	4-B	07A61363W01	Stopper, Shaft (C)
47	4-C	07A61364W01	Stopper, Shaft (D)
50	4-D	01A61354W01	Assy., Riv. Bracket Damper
52	4-C	07A61365W01	Spring, GND
71	3-G	44A80103W01	Gear, Idler
86	4-A	44A60134W01	Worm, Wheel Tray
100	4-F	44A80103W01	Gear, Idler
○ 104	3-E	41B31986W05	Spring, Coil
□ 104	3-E	41B31986W15	Spring, Coil
129	4-B	44A80104W01	Gear, Drive
130	4-F	41A41640W01	Spring, Roller
□ 131	4-H	01A81848W01	Assy., Spring RTL
□ 132	4-H	03S94385F01	Screw, Pan (M1.7 ×2.3)

Miscellaneous

LD701		48T16057W04	LED, AN501-B1 (RED)
PT703		48T35506W04	Transistor, Photo PS3062
M103		01V61900W99	Assy., Tray Motor (6V-260mA)
M104		01V63100W04	Assy., Loading Motor (7V-260mA)

NOTE : ○ : For DS24A03B Model Only, □ : For DS24A03C Model Only, Others : Common.

CDメカニズム関係部品表

※ 記載されていない部品については、サービスマニュアル・DSシリーズ(68P41901W02)を参照願います。

記号	索引	部品番号	部品名	標準卸価格
11	3-A	44A80102W01	Gear, Timing	80
21	1-B	44A80102W01	Gear, Timing	80
22	3-D	45A61361W01	Link, Clamper	60
32	5-E	01V64500W91	Assy., Clamper B	1,600
○ 33	5-C	01V86200W71	Assy., Drive Unit (Included Spindle Motor (M101))	10,100
□ 33	5-C	01V81200W22	Assy., Drive Unit (Included SpindleMotor (M101))	13,500
○ 35	2-E	01V64500W86	Assy., Chassis Top (A)	11,500
□ 35	2-E	01V88400W78	Assy., Chassis Top (A)	7,460
38	4-F	07A61360W01	Bracket, Top	70
39	5-E	43A60884W01	Spacer	45
40	2-E	01V41100W46	Assy., Bracket Roll Upper	1,350
45	4-C	07A61362W01	Stopper, Shaft (B)	110
46	4-B	07A61363W01	Stopper, Shaft (C)	90
47	4-C	07A61364W01	Stopper, Shaft (D)	50
50	4-D	01A61354W01	Assy., Riv. Bracket Damper	220
52	4-C	07A61365W01	Spring, GND	90
71	3-G	44A80103W01	Gear, Idler	90
86	4-A	44A60134W01	Worm, Wheel Tray	50
100	4-F	44A80103W01	Gear, Idler	90
○ 104	3-E	41B31986W05	Spring, Coil	90
□ 104	3-E	41B31986W15	Spring, Coil	60
129	4-B	44A80104W01	Gear, Drive	130
130	4-F	41A41640W01	Spring, Roller	220
□ 131	4-H	01A81848W01	Assy., Spring RTL	380
□ 132	4-H	03S94385F01	Screw, Pan (M1.7 ×2.3)	50

その他の電気部品

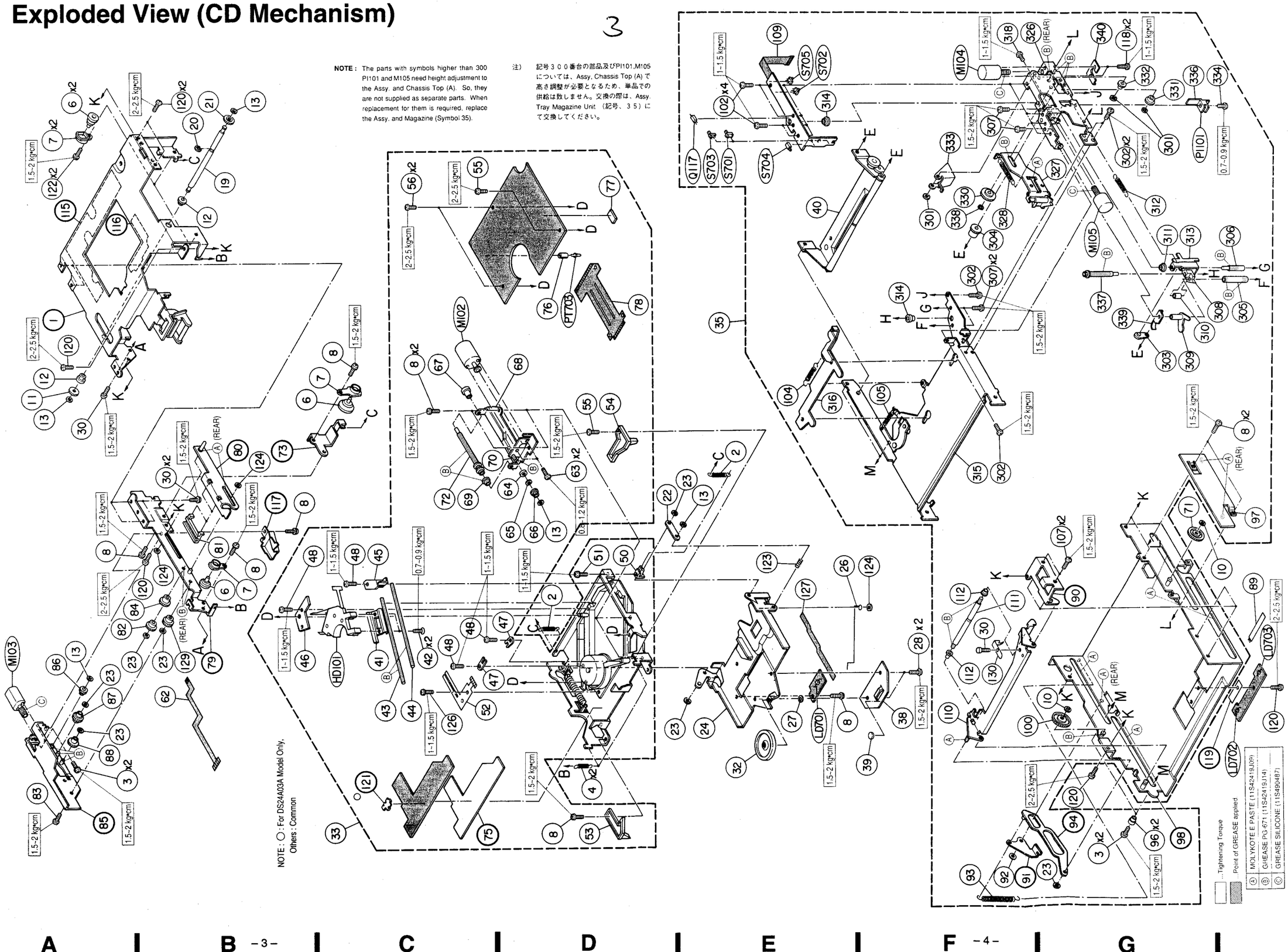
LD701		48T16057W04	LED, AN501-B1 (RED)	140
PT703		48T35506W04	Transistor, Photo PS3062	260
M103		01V61900W99	Assy., Tray Motor (6V-260mA)	1,320
M104		01V63100W04	Assy., Loading Motor (7V-260mA)	1,550

[注記] : ○ : DS24A03Bモデル専用, □ : DS24A03Cモデル専用, その他 : 共通

Exploded View (CD Mechanism)

NOTE : The parts with symbols higher than 300 PI101 and M105 need height adjustment to the Assy. and Chassis Top (A). So, they are not supplied as separate parts. When replacement for them is required, replace the Assy. and Magazine (Symbol 35).

注） 記号３００番台の部品及びPI101,M105については、Assy, Chassis Top (A) で高さ調整が必要となるため、単品での供給は致しません。交換の際は、Assy, Tray Magazine Unit （記号、３５）にて交換してください。

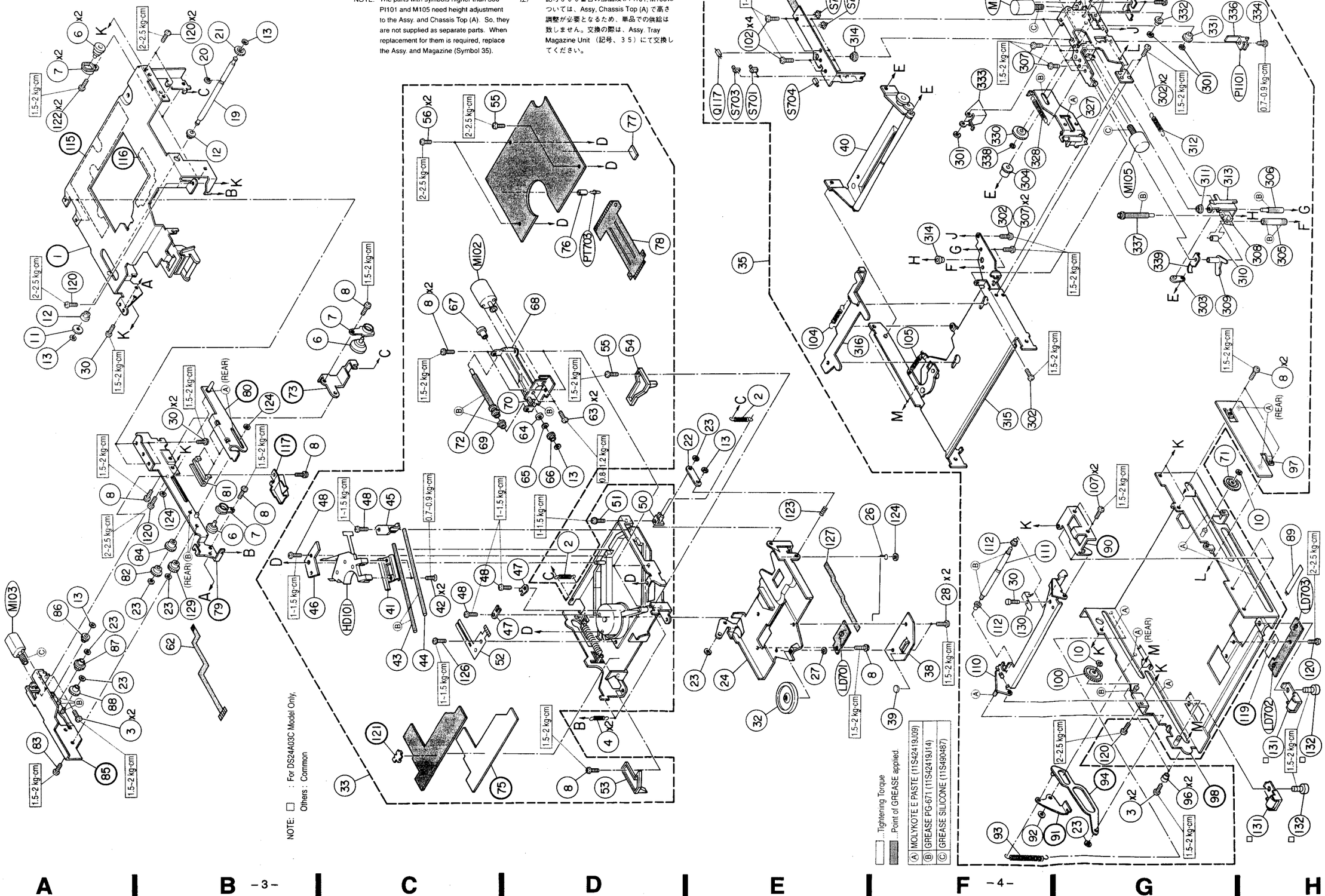


Exploded View (CD Mechanism)

4

NOTE: The parts with symbols higher than 300 PI101 and M105 need height adjustment to the Assy. and Chassis Top (A). So, they are not supplied as separate parts. When replacement for them is required, replace the Assy. and Magazine (Symbol 35).

注） 記号３００番台の部品及びPI101, M105については、Assy, Chassis Top (A) で高さ調整が必要となるため、単品での供給は致しません。交換の際は、Assy, Tray Magazine Unit （記号、３５）にて交換してください。


NOTE: □ : For DS24A03C Model Only,
Others : Common
... Tightening Torque
... Point of GREASE applied
Ⓐ MOLYKOTE E PASTE (11S42419J09)
Ⓑ GREASE PG-671 (11S42419J14)
Ⓒ GREASE SILICONE (11S4904B7)